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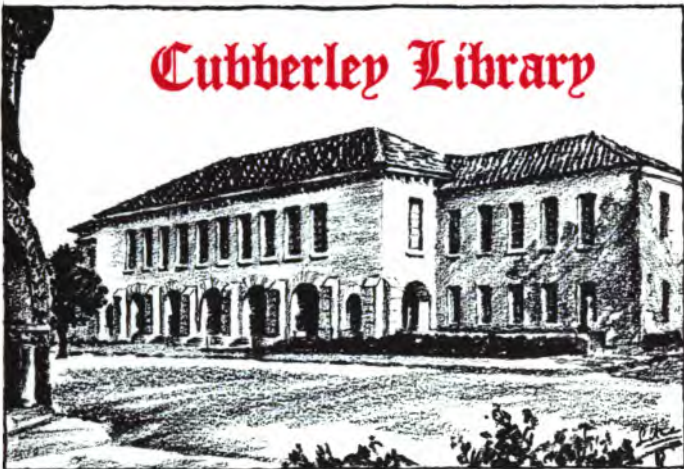
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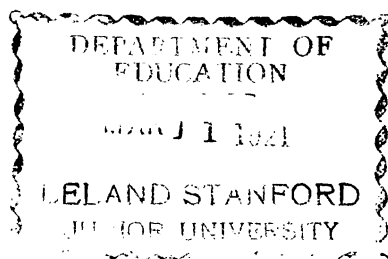
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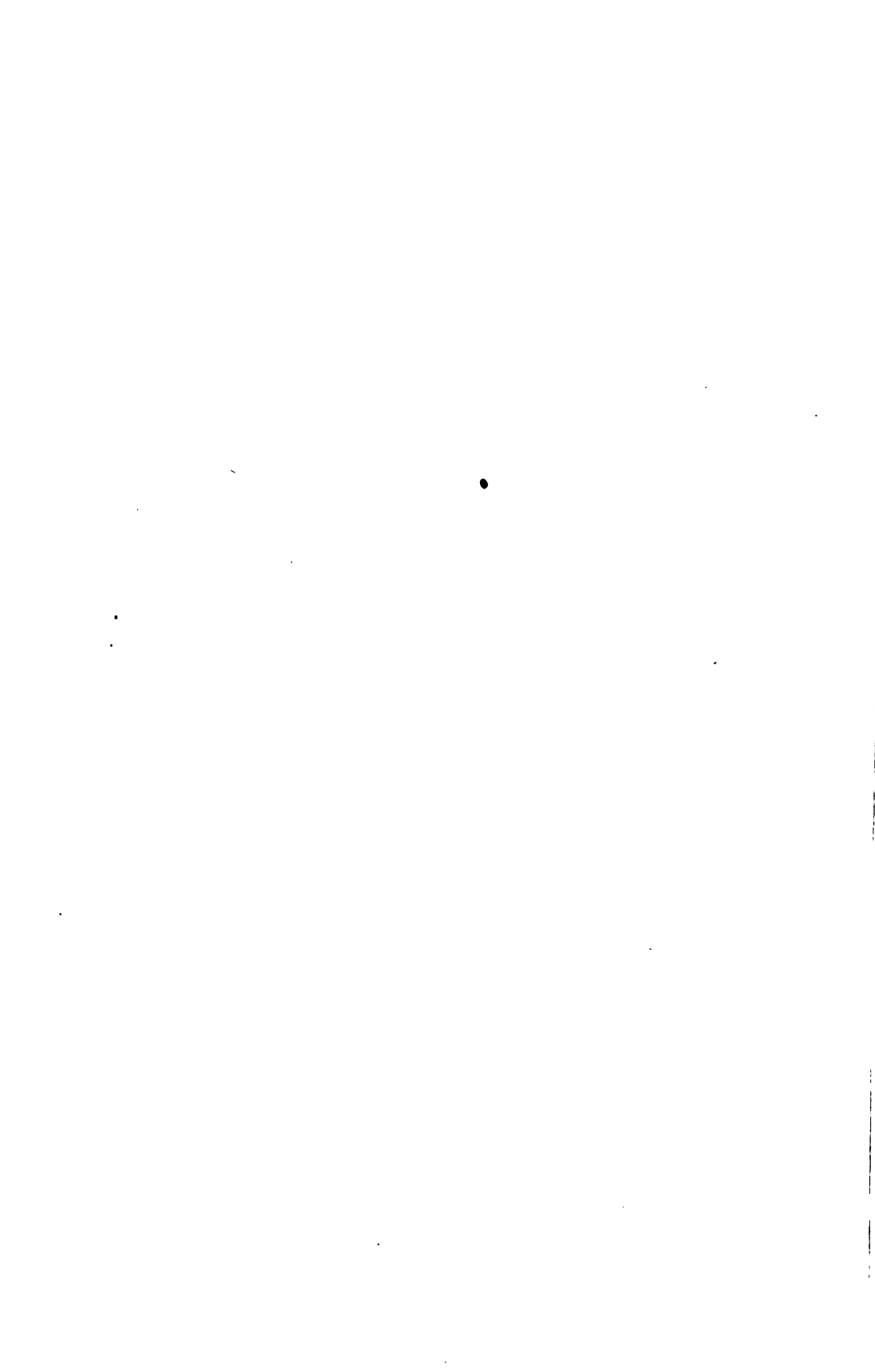
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UNIVERSITY OF ILLINOIS

**Issued From The
HIGH SCHOOL VISITOR'S OFFICE**

PROCEEDINGS OF THE HIGH SCHOOL CONFERENCE OF NOVEMBER 18, 19 and 20, 1920

**Edited and Compiled by the
High School Visitor**

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STATISTICS OF HIGH SCHOOL CONFERENCE

1919-1920

	1919	1920
Total attendance	2086	2600
Total No. registered	2086	2579
Total registration exclusive of University.....	1939	2481
No. Public High Schools represented	451	527
No. representatives of Colleges and Academies.....	71	70
No. representatives of Normal Schools	40	36
No. representatives of School Boards	3	4
No. County Superintendents	24	33
No. representatives of Book Houses, etc.	23	18
No. of High School Teachers whose expenses were paid in full	446	475
No. of High School Teachers whose expenses were paid in part	425	744
No. of High Schools represented by delegates whose expenses were paid in full or in part.....	306	394
Following is the registration by sections:		
Administration	339	312
Agriculture	74	103
Biology	78	96
Classics	115	181
Commerce	112	134
County Superintendents and Village Principals	85	178
English	319	399
Geography	13	26
Home Economics	162	199
Manual Arts	61	93
Mathematics	153	226
Modern Language	73	158
Music	79	87
Physical Education	27	39
Physical Science	99	131
Social Science	106	176
No section given	44	41

PART I

GENERAL SESSIONS

1. GENERAL BUSINESS

At the meeting of the General Conference Committee at 4 P. M. Thursday, November 18, the plans for the coming session were discussed. Proposals with reference to the 1921 Conference and the general problems of organization and investigation were discussed.

At this meeting a proposal was brought forward by some of the high school representatives that high schools be invited to become institutional members with a regular annual membership fee of five dollars. On Friday this proposal was placed before the Principals' Association at its business session and was approved by an almost unanimous vote.

Reasons for having to limit the free distribution of the Proceedings were also presented by the Director. The limited budget and the very high cost of printing and paper were given as the reason for this change.

2. THURSDAY EVENING

A very enjoyable concert by the University Band under the direction of Professor A. A. Harding opened this session at the Auditorium at 7:30 P. M. Thursday, November 18. Superintendent I. M. Allen, presiding for the evening, after a brief statement of the work of the Conference and its significance to the High Schools of the state, presented the Director of the Conference, Professor H. A. Hollister, who spoke as follows:

Why Is a Conference

1. Brief Retrospect

It is now fifteen years since this series of Autumn Conferences was organized. It seemed at the time that some such organization was needed, yet the state was so full of educational meetings that the fate of the enterprise might have been considered enigmatical at least. The other day some one spoke of your director as appearing to be a pessimist. Certainly no pessimist would have undertaken such another organization at the time this was launched.

From the beginning it was conceived as a working organization, —a real conference; but it has grown beyond all expectation. Sometimes I wonder if we were not better off back in 1909 and 1910 when we had 600 to 660 in attendance. Last year we passed the 2000 mark

with eleven of the sixteen sections out-numbering the total initial conference registration of about 75 in 1905. At least seven of these eleven sections are almost conventions in size and two of them last year enrolled over 300 each.

This counselling together between high schools and University has been profitable to both, and I venture to say highly beneficial to the educational interests of the State. Among other things it has aided materially in unifying and improving the character of high school instruction; it has led to the placing of the four main vocational lines of high school work on a basis of educational value to warrant acceptance towards university entrance; it has secured for high school teachers a fuller recognition by high school boards with a corresponding increase in opportunities for professional advancement; and it has given to the body of high school principals and teachers a solidarity and unity of purpose scarcely equalled in any other state.

II. The Present Situation

But now we are facing a real problem which comes largely from the very fact of our growth in numbers. What was begun as a conference has become a convention. Even its sectional groups, the biggest feature of the conference, are large enough to constitute conventions. As a result we are each year drifting farther away from our original purpose. A profitable and therefore successful organization of teachers is not a mere matter of numbers meeting together to listen to addresses, no matter how interesting and inspiring these may be. A few such addresses, calculated to clarify the vision and inspire to greater effort along the lines of concerted action, are certainly desirable. But the real value of an educational conference is to be determined by its actual accomplishment in constructive work. The good that the individual teacher gets out of such a gathering will depend largely on what he puts into it in the form of participating endeavor.

We have in this body, undoubtedly, a group representing the highest average of training and scholarship of any organization of public school teachers that meets in Illinois, outside of the city of Chicago. Yet the number who attend in a purely receptive attitude, just for what they can get out of it, is now all out of proportion to the number who are at work on some of the numerous problems which today confront high school education in Illinois. There are already unmistakable signs of degeneracy into the typical American educational gathering, always as much concerned about its social features and any opportunity afforded for petty politics and log-rolling as about the real business for which it is assembled.

I appeal to you, fellow teachers, is it fair to the interests we represent that we take the time out from our daily tasks, and accept, many of us, the partial or entire payment of our expenses for the trip, merely to be entertained or inspired, even, without at least an effort to contribute something ourselves?

But how, you ask, are we teachers in large numbers to be able to participate? It is here that the real significance of the nature and purposes of our organization seems to your Director to have been lost sight of. As far as I know this was the first public school teachers' organization of any size in America or any where else to give opportunity, in a wide scheme of specialized group meetings, for a large degree of participation by teachers. It was realized from the first, however, that such specialization might, of itself, work real harm to the high school as an organic whole. This undesirable result might come about in either one of two ways: First by the placing of exclusive emphasis on one's own special field to the neglect of all essential limitations and relationships resulting from the wide range of subjects offered in the modern high school; second, by the emphasis which such a narrowed vision would tend to place upon mere traditional outlook supported by various vested interests as represented in the teachers' preparation or in the published literature of a given subject.

These possible evil results we thought to offset or prevent altogether by means of our general sessions, and by the joint programs provided for by various interlocking committees. In this effort thus far we have largely failed, chiefly because the teachers who attend the section meetings mostly leave out of their plans attendance upon the general sessions. In almost every case the programs of these latter meetings for the evenings and for Saturday have been planned with this special purpose of unification in view. Take for illustration the program for Friday evening of this conference. A leader in his field of at least nation-wide reputation honestly earned is to present to us the latest thought on the contribution which Biological Science has to offer for our scheme of universal Secondary education. Here is a theme which touches closely any effective health program. It is closely related to civics. It furnishes one of the reasons for modern language, yes, and for Latin and Greek. It touches intimately the problem of good English, as all subjects do; and enters into literature through the writings of the poet-naturalist. It lies at the foundation of much of our art, and some of our music, even. It is on good terms with mathematics, and is a near relative of all other natural sciences and their applied forms, especially agriculture. It is little less than a calamity that the teachers of the subjects thus related, even if only remotely, are so generally unconscious of this relationship. Yet probably one-half to two-thirds of those for whom it is especially intended will not be present at that session. And if you were to ask them why the reply oftenest heard would be: Why should I be interested in *that* subject? My work is in an entirely different line.

Again, we tried last year to inaugurate a plan of operation of our sections by suggesting a division into smaller groups either along lines of evident differences of interest or by having several groups for discussion, under competent leadership, of the same problem or topic.

The common objection to this was that some of the members of the section might fail to hear something of interest and value,—always the idea of the receptive attitude rather than that of participation in the study of problems. These forget, seemingly, that the actual things accomplished may be found quite readily available in print.

III. What Next?

The most important undertaking as a means of concentrating our interests and at the same time providing a place for the study and discussion of all our problems is the plan in the form of general conference objectives proposed two years ago. Here is a plan comprehensive enough to enlist our entire membership, at least in so far as there is a stabilized body of members, in a series of studies and investigations having for their ultimate objective the universalizing of high school education in Illinois. In its very nature it involves all of the problems of administration, method, and organization of materials pertaining to high schools, and even more.

This proposed plan does not in any way interfere with the plans of any other educational agency of the state. On the other hand its accomplishment includes a study of all the essential features and limitations of secondary education. To begin with, a half dozen subordinate problems were set up, the solution of which has already waited too long. Too long, I say, because our failure to solve them was and is daily increasing a certain wastefulness in our educational work. At the same time this delay is augmenting the danger to our fundamental institutions on account of a level of mass intelligence too low for the successful operation of representative government.

We have made a little progress, through our committees, in the study of some of these problems. Several good reports were given last year and there are others to come this year. There will be still other problems and their corresponding committees as we advance. One of these, provided for last year, is a committee to study method especially as related to curriculum readjustment, administrative organization, and real economy in education. What shall we do with this proposal? To make it effective we shall need the cooperation of every department of this conference. Without some such concerted plan of action, entered into heartily by all, the conference will soon be in danger of losing the quality of its greatness as an instrumentality for constructive service to the state.

To render the plan effective will require some such conditions as the following:

(1) Persistent activity by all the special committees selected to investigate and report on the major subordinate problems.

(2) Organization of the sections in cooperation with this plan. This we see already accomplished in some instances, as shown in the section programs for this year.

(3) Full cooperation by principals working with their teachers during the year and reporting back results.

(4) Frequent joint discussions of correlated groups.

(5) A careful listing of capable leaders of research and discussion through reports from high school principals.

(6) And finally a more adequate financing in order to defray necessary committee expenses.

Whoever accepts a place on a Committee should do so for the purpose and with the intention of accomplishing, to the very best of his ability, his portion of the task assigned. If there is a call for a committee member or a special assignment, recommendations should be on merit solely, and not in order to do a personal favor or to promote the interests of self or of a friend.

We have made some progress with the problem of curriculum reconstruction. This, with the coordinate problem of method, presents perhaps the greatest of our difficulties. At the same time these two features offer material upon which all elements of the conference may work advantageously. Evidently the aims in view and the things already accomplished have not always been understood. In the initial address by Dr. Charters we have set forth a method of procedure briefly summarized under seven rules. This plan of attack has been followed consistently by our committee named two years ago for that purpose. This committee has presented us with a set of ultimate objectives capable of being analyzed into smaller units. This analysis is the next step if we are willing to accept the report of the committee as presented last year.

It is true that other sets of objectives might readily be found; but thus far there has been no wide divergence of opinion expressed. There has been objection to this method of attacking the problem through objectives. To refuse, at this time, to accept this general method of procedure would be practically to repudiate the splendid scheme presented by Dr. Charters along with a vast amount of careful committee work that followed. As far as I can ascertain the adverse opinion emanates chiefly from another educational center; but why should that concern us here? We have yet to learn of a better plan of procedure than the one now before us. If others wish to attack the problem from a different angle, so much the better. There is no monopoly of ideas yet. Nor should we object to discussion, for it is the truth we seek. But to attack a project negatively and with no reasonable substitute, or to undertake to hinder or prevent an honest endeavor for betterment through ridicule or by characterizing a well thought out plan of procedure as trifling or impossible before it has really been tested, smacks of a motive other than that of seeking the truth, or of a sincere desire to serve the public school interests of our state.

Such an undertaking as that of a sane and effective curriculum readjustment is not a matter of a day or a year. It is a problem the true method of which remains to be discovered; and when it is discovered it will involve a movement, ever progressive, of elimination, recombination and readjustment as social needs and conditions change. But ultimate objectives, having their basis in the fundamental needs of human life, will vary but little if at all. It is to discover such a method that we have set for our goal,—a method which will enable us to set right any present mal-adjustments at the same time that it gives us a permanent guide for the making of future changes.

We invite you once more to unite in this task and to persist until a real unsurmountable obstacle appears. A few have already undertaken the next step of analyzing the objectives set up into smaller units. By such analysis we should be able to discover any elements possibly not included in the objectives yet essential to a full rounded curriculum. We shall hope to hear something of these efforts later on.

I am an optimist; I believe in America and our splendid institutions. But because of this very faith I am compelled to face soberly, and not without concern, the situation which the times present. We live not to ourselves alone. Our interests, our welfare as a people, the very life of the nation are inseparably bound up with the world-life about us. Against the propaganda of an enraged humanity, maddened in its rebound from autocratic subjugation and long deprived of the knowledge by which alone men are made free, our only dependable bulwark is our free public schools.

Speaking of the general bewilderment in which thoughtful men of today find themselves, Professor James H. Robinson thus characterizes the situation: "When they contemplate the shocking derangement of human affairs which now prevails in most civilized countries, including our own, even the best minds are puzzled and uncertain in their attempts to grasp the situation. The world seems to demand a moral and economic regeneration which it is dangerous to postpone, but as yet impossible to understand and direct. The preliminary intellectual regeneration which would put our leaders in a position to determine and control the course of affairs has not taken place."

It may be, my fellow teachers, that leaders possessed of such a mind and numerous enough to "control the course of affairs" in this great country are still awaiting their training at our hands. At any rate, this is undoubtedly true of many who must, in coming years, assume the duties both of leadership and as followers in the progress of social order. Are we ready for such a task? Have we the schools, in sufficient number, properly manned and with the materials and processes of education carefully arranged and thought out with reference to the ends to be sought?

While we are demanding of the people that they provide more adequately for the financing of education and the teachers' pay, we

must not forget that this same public is looking to us to reshape and conduct the schools in such a way as to meet the strong demands which our national welfare places upon them. We believe in the possibilities of this group. Will you believe and act with us so that we may, by cooperating, do our bit towards meeting what the people demand of us? Can we not lay aside the questionings and differences that so often disturb the pedagogic mind and devote all our surplus energies to the tasks confronting us? This is no time for petty jealousies to blight our usefulness. There is room for all of us to work. Our country calls us today. Can we do less than the boys who but yesterday laid down their lives for the sake of a better humanity? Shall we, by dalliance, let go the opportunity they helped to win for us on honor's field?

Following this opening address by the Director, Superintendent L. W. Smith, of the Joliet Township High School, gave a brief statement of the plans of the committee on Extension of High School Service and the Economic High School.

President David Felmley, of the State Normal University, then read a brief report for the Committee on the Training of Teachers.

This report was as follows:

Report of the Committee on the Training of Teachers

Your committee on the training of teachers made a preliminary report last year in which was set forth briefly plans for a thoro statistical study of the annual needs of the state for new teachers, and of the sources from which the teacher supply is now drawn.

The data for this report have been gathered by the state department of public instruction, the compilation of this material has proceeded thru thirty-seven counties; its interpretation is in the hands of Dr. Buckingham of the University of Illinois, who will make a thoroughgoing report at the next meeting. The rest of this report deals with two other aspects of the teacher-training problem of large importance to rural and graded elementary schools.

The chief agency of the state for the professional training of teachers is the system of state normal schools. Their graduates usually enter the elementary graded schools. About one-fourth of them, 1105 in all, are teaching in accredited high schools. Very few are to be found in the rural schools. The demand from the towns will absorb twice as many graduates as our normal schools are likely under present conditions to turn out for years to come. To few young women does country school teaching strongly appeal. The isolation, the lack of social life, the muddy roads, the unsatisfactory boarding places, the large number of classes, the irregular attendance with consequent imperfect work all look uninviting, if a town school can be had. Very few farmer-directors are ambitious to employ a professionally-trained teacher. They are satisfied with experience and a second-grade certificate.

Two-thirds of the 10312 rural schools of Illinois are taught by high-school graduates who begin with no professional training. Many of them cannot afford to attend a normal school. They do not need to, for under present conditions they can get good salaries just as they are. Of the graduates of the smaller high schools more teach than engage in any other gainful occupation. If the

high-school course should include studies that make for vocational efficiency, why not include in the high-school course courses that will help the graduates who will teach?

Many high schools already do so. They give review courses in the common branches to aid in passing the teacher's examination. Sometimes a semester of psychology or pedagogy is taught. But all this work is frequently done by high-school teachers without special study or experience in the elementary field. The motive usually is to aid the high-school student, not the children that he will teach. Too often these review courses are elective substitutes for regular senior courses that the tradition of the high school pronounces its best courses. Frequently the University is reluctant to countenance the omission of these senior studies. So it happens that even seniors looking forward to teaching stick to the regular course. In only the few cases where a strong teacher knows the problems of the rural school and feels a keen interest in seeing those problems solved do we secure really effective work.

To remedy this state of affairs, fourteen American states have made provision for the special training of rural teachers, Michigan, Ohio, and Wisconsin in county normal schools. Vermont, Maryland, Virginia, New York, Wisconsin, Minnesota, Iowa, Missouri, Nebraska, Kansas, Oklahoma, and Oregon in training departments in city high schools. The plans differ in the various states. Minnesota is the most successful whether judged by the amount of state aid, the number of departments, the number of graduates, or by the excellence of the administration. The General Education Board has published a study made by President L. D. Coffman of the University of Minnesota dealing with these Teacher Training Departments in Minnesota high schools. The chief features of the Minnesota plan are these:

There must be at least one well-qualified teacher devoting her entire time to the training department. She is paid a good salary, usually better than any other teacher receives except the principal. These teachers have had rural experience. Almost all have grown up on farms or in small towns. More than half have attended country schools; they have taught country schools. Ninety-three per cent of them are normal-school graduates. Seventy-five per cent of them are over thirty years of age; the median age is thirty-four, ten years older than the average American teacher.

The state gives to each of the 110 high schools maintaining a department of not less than eight pupils, sixteen hundred dollars (\$1600) to apply on the teacher's salary. If two teachers are employed in the department, \$2400 is granted; for three teachers, \$3200.

The course of study is prescribed by the state, and a special supervisor of teacher-training departments is attached to the state department of public instruction.

The teachers are expected to spend six weeks each summer at a special summer school where plans for improving their work are discussed.

The instruction is generally given to high-school seniors, altho some graduates and some mature specials are enrolled. Students who complete the course are granted teachers' certificates good in rural schools only. Until such certificates were granted few students took the course. Now over 1200 are enrolled.

The county superintendents of Minnesota, and most of the city superintendents who observe these departments in action agree that they have greatly served the state, that their graduates are far superior to teachers without normal training of any kind and that to do away with them without some adequate, even superior, substitute would be an unthinkable blunder. They note these reasons for keeping the system:

1. Girls who are not financially able to go away from home are given a training that they could not otherwise enjoy.

2. Girls who have once tasted the joys of town life and have received at a state school the training which enables them to secure a town position will not go back to the country to teach.

3. State normal schools do not train teachers to work happily and efficiently in rural schools; they are overtaxed to supply the town schools and ignore the rural-school need. It should be said, too, that the teachers in these training departments are dealing with their problems in a courageous and effective manner.

Yet President Coffman is not inclined to favor the continuance of these rural training departments as a permanent feature of the Minnesota school system. This adverse opinion is due to certain inevitable weaknesses in the plan that must always render it inadequate.

Among the courses offered are seven common branches prescribed by law, viz., American History, Civics, Geography, Arithmetic, Reading, Grammar, and Physiology. Besides these are required Psychology, School Management, and Practice Teaching. In some schools are taught also, Agriculture, Gardening, Manual Training, Construction, Scrap-book Making, Drawing, Art Chart Making, Seat Work, Sewing, Domestic Science, Hot Lunches, Children's Literature, Composition, Spelling, Phonics, Story-telling, Dramatization, Play, Cales-thenics, Community Clubs, School Law, Music, Current Events, Library Lessons, and Penmanship. The teacher is also expected to hold the alumnae together with correspondence and reunions and to spend one day a month visiting graduates in their schools. They keep Saturday office hours where any rural teacher may present her problems for consideration and advice. They organize farmers' clubs and arrange community programs, they visit the homes in the district, they engineer entertainments and stimulate and guide the social life.

"Inevitably the instruction given under these conditions must be hurried and formal. There is a deplorable dependence upon texts and a sad absence of spontaneity, special adaptation and thoroness. This is because the teachers are attempting the impossible. Can one or two women in a year's time expect to teach courses to which the corps of trained specialists in the normal school devote two years." Even if the work were limited to the prescribed branches, the field is too great for one teacher, however versatile and accomplished, to cover as it ought to be dealt with before a class of future teachers.

The average cost of a year's training in these high-school departments in 1917-18 was \$125 per pupil. In the state normal schools it was \$175.

But this difference in cost does not measure the difference in efficiency. The advantages of living away from home in a college atmosphere where one's whole time may be given over to school affairs, the broadening of interests, the quickening of enthusiasms, the contact with superior teachers in their special fields are features the local school cannot afford. Hence at its best the system can afford only a partial substitute for the training of a good normal school.

Your committee believes that a system of teacher-training departments in Illinois high schools modeled in its main features after the Minnesota plan would be of great value to the rural schools of Illinois. The work done should articulate with the curriculums of the normal schools in such a way that due credit may be given. The summer terms of the state normal schools may be used to supplement the earlier instruction and to earn a certificate good in graded elementary schools or for a longer term in rural schools. Gradually these training departments may be brought to a high-school graduate basis.

If this system were adopted in Illinois in four years we may expect one hundred high-school departments graduating 1000 students per year and supplying one-half of the annual demand for new teachers in the rural schools. It is doubtful whether any \$200,000 expended for education will yield larger returns.

II.

The normal schools of Illinois, like those of other states, are under-peopled. We have maintained our pre-war organizations, our facilities have been only slightly reduced; but our grist is light, our classes shrunken, our morale impaired. The cause is well understood. The scarcity of qualified teachers is no fiction; in their absence the unprepared youngsters are pressed into service. But no wise farmer will work his two-year-old colts.

A wise state economy would fill the normal schools to their capacity, a proper regard for the rights of children would forbid the unprepared to teach. Better wages for teaching and a period of hard times and general unemployment in the industries may fill the normal schools, but surely their full functioning ought not to depend upon industrial and commercial disaster. We may expect when times are good and good positions are open in business paying "a living and a saving wage" that only the well-to-do and devoted student will resist the present lure of a good job and good pay and spend two or more years further in preparation for a remote and doubtful position.

What is the remedy? I believe the best remedy is that so long advocated by W. C. Bagley, scholarships in state normal schools.

When a young man joins the army he is unfit for the battle line; he must be trained for several months. He is a service man but not a soldier. But during these months of training he is clothed, fed, housed, doctored, paid at the same rate as is the seasoned soldier. The selected youth at West Point and Annapolis are provided at public expense with books, tuition, living, and six hundred dollars a year spending money. Why may not teachers be regarded as having entered the service of the state as soon as they enroll in the normal school?

Manufacturing establishments advertise for help who will be paid while learning. The pay of a telephone girl begins when she enters the exchange. The nurse in training from the start receives her maintenance and a salary besides. These are private businesses run for profit. It pays to make the outlay for the sake of the skilled service farther on.

We are already endowing education. Not only do we furnish buildings, laboratories, instruction free or far below cost, but we pay something towards the student's living. The University of Illinois offers a large number of scholarships and fellowships in its Graduate School—two hundred fifty dollars or more—usually with no requirement of reciprocal service. The state of New York pays one hundred dollars a year thru a four-year course to over 3000 students in the colleges of that state. There are said to be over 6600 foreign students in 446 institutions in this country. They come from almost every part of the inhabited globe, and their respective governments are paying part or all of their expenses. These governments see a good reason for this expenditure. For these and other facts your committee is indebted to President James G. Riggs of the Oswego (N. Y.) State Normal School.

The real question is, Will the superior service of a trained teacher pay for the initial outlay?

We are now paying pensions to retired teachers. A pension is only deferred wages. It was earned as the teacher worked. The pension justifies itself in the superior effectiveness of the public servant who can face age or infirmity without a shudder. The State of Illinois in paying \$400 a year to her teachers who retire at 50 after 25 years of service, virtually declares "The value of your service during these 25 years has been 131 dollars a year greater because you were free from this haunting fear of the future."

The pension is paid when the need of it comes at the end of service, but is there not sometimes an equal or greater need at the *beginning* of service. May not the teacher who gets this aid for her training be worth \$131 more per year

because of that training? Most teachers even the most talented, come from families of modest resources. In what better way can the state avail itself of the talent and character of choice young people?

The School Board at Streator proposed last June to loan \$150 a year to any high-school graduate who would take a two-year course at a State Normal School. The notes are to be cancelled if she teaches two years in Streator after graduation. The school board believes that a trained teacher is worth \$150 per year more than an untrained teacher. They see, too, that if she is a Streator girl and teaches two years in that city she is likely to teach longer.

Six girls from Streator are at Normal; three, whose parents are well-to-do, preferred to be "independent," as they phrase it. The other three accepted the offer. One of them ranks among our very best students.

Let us suppose that Illinois should appropriate \$300,000 a year for a thousand scholarships in the state normal schools. This would pay living expenses for 500 students thru the two-year course. Probably an equal number would come on their own expense. This would mean 1000 normal-school graduates each year, which would go far towards satisfying the needs of graded schools and village high schools and superior country schools outside of Cook County. Our normal schools could care for them all with little addition to equipment or staff of instruction.

The students receiving these scholarships should meet physical and scholastic standards; they should pledge themselves to teach at least four years in the public schools of the state and as a guaranty should sign four promissory notes of \$150 each, one note to be cancelled with each year of teaching. School boards are now paying from fifty to one hundred dollars to teachers for attending a six weeks summer school. This scholarship would be at the lowest rate fifty dollars for each six weeks.

Several foreign countries—France, Argentina, Chile, many of our states—Connecticut, Utah, Arkansas, South Dakota, Louisiana, South Carolina, New Mexico, and Maine, pay part of the maintenance cost of teachers in training.

The Smith-Townner bill contains provision for national aid to institutions engaged in the preparation of teachers. One item proposes "to encourage thru the establishment of scholarships and otherwise a greater number of talented young people to make adequate preparation for public school service and otherwise to provide an increased number of trained and competent teachers."

Illinois simply has not yet arrived.

Your Committee in this partial report makes only these two recommendations:

A state appropriation not to exceed \$200,000 to aid high schools maintaining training departments for rural school teachers, and such legislation as shall provide for the proper administering of this fund.

A state appropriation of \$300,000 to provide 1000 scholarships at the state normal schools to be granted under conditions that will secure to the state the service of the recipients of such scholarships.

Respectfully submitted,

DAVID FELMLEY,
P. M. WATSON,
I. M. ALLEN,
Committee.

3. FRIDAY EVENING

The delightful musical prelude to this second general session of the conference was rendered by members of the Faculty of the School of Music, as follows: Organ Selection by Miss Edna Treat; Profes-

sor Schwartz, 'Cello, with piano accompaniment by Professor Vanden Berg; Vocal solo by Mr. Johnson.

The presiding officer for the evening was President Livingston C. Lord, of Charleston. President Lord took occasion to speak briefly of the high character of the work which the Conference is doing. He characterized it as the most important educational gathering of the State.

President David Kinley was then presented and spoke as follows in greeting the teachers of the State:

Ladies and Gentlemen, Members of the High School Conference:

It would seem a trifle superfluous for me to give words of greeting or extend words of welcome to you, as if you were guests in your own household. For you are at home here in as true a sense as I myself am. Nevertheless, it gives me great pleasure to perform the duty which Professor Hollister and President Lord have put upon me in welcoming you formally to this great and important meeting. But before I do so I am going to take advantage of the opportunity which has been given me to speak—because I have so few opportunities to speak—to say a word or two on a topic somewhat different from the greeting.

I am impressed with the significance of this great gathering. There may be larger educational gatherings during the course of the school year, but I venture to say you will agree with me that there is no one of greater significance or of greater importance to the educational system of the state. This gathering is significant of several things, one or two of which I would call to your attention. It is significant first of the responsibilities that lie, under present conditions, upon the teachers in the public schools, and, indeed, in all schools, for all schools in a sense are public schools, including the universities. We are living in somewhat unusual times so far as concerns the responsibilities of the teacher. You know as well as I the difficulties under which you are working, the hard conditions under which you are living, the cry of distress that has gone up for better conditions of living and the cry of distress from the school people, responsible immediately for the schools, because of the difficult conditions under which the schools are being conducted and under which the teachers are living. These difficult conditions put a greater and a higher responsibility upon you and me as teachers. The call is trumpet loud and clarion clear upon us to force, as we have never forced before, upon the attention of the public, whose representatives in education we are, the needs and the importance of the great calling of which we are members, not that you and I may get better salaries or shorter hours or better living conditions, but that we may better discharge the high responsibility of leading these boys and girls, the most precious heritage of our people, into the light and higher life. In order to do this in the best way and to the best of our ability the teachers in every grade—from the kindergarten up through the university—must tell his fellow men of the higher life. The teacher is the prophet of today; he is the leader of men and after he has blazed a path for the children, blazed a path through the tangled forest of knowledge, then they walk in it and upwards to the light. That is our responsibility today and a responsibility greater today than ever before in the history of the country.

This gathering is significant of the unity of the public opinion of the state. We speak of the grades, the high school, the University, the normal schools, teachers' colleges, etc. They are but parts of one whole, and the health of every part depends upon the health of every other part. They are not competitors, they are cooperators. Such a gathering as this emphasizes the unity of our educational system.

It is a great thing for the University of Illinois, therefore, that you teachers in the high schools of the state have taken time and have shown interest enough to come here for two or three days to consider topics of common educational interest and importance. You cannot know, you will never know, what these meetings have meant to this University as they have been held from time to time. Perhaps we can never know how helpful they have been to you. Although the results seem intangible, we do know that the benefits are there and that the advantages are worth the sacrifices of the meeting.

It is a peculiar pleasure to see these meetings grow from year to year, not only in attendance but in definiteness of purpose, in a better spirit of cooperation, and in a more united determination to do what we can to lift up the whole educational system of the state. I thank you in the name of the University for coming for such a purpose. I welcome you in the name of the University, the Board of Trustees, the faculty and the students to these halls for the conduct of your meeting. We are called upon to do harder things and harder duties. We must go before the public to tell the difficulties of the teaching profession for the sake of the boys and girls. For we are all too prone to pay more attention to the care of our stock than we are to the care of our children. The responsibility of changing that is upon the individuals who attend such gatherings as this.

I trust that thus far you have enjoyed yourselves and that you have gotten out of your meetings all that you have hoped for. I have heard already many good words of commendation for the inspiration and helpfulness of the meeting. I hope that you will make yourselves at home at the University and that you will find time to visit some, at least, of our departments—those most closely connected with your work. I trust that you will all count yourselves members of the University family, and when you go home, go with the heartfelt assurance that what the University of Illinois can do to help you in your work we will gladly and cheerfully do, and if we need your help we will not hesitate to call upon you, hoping for the same ready response.

I welcome you, therefore, again and trust that you will find the benefits of this great gathering a sufficient justification for your attendance.

Professor J. H. Whitten of the Chicago Teachers' College was next announced and read the following Memorial to John Lossen Pricer:

John Lossen Pricer—A Memorial

J. H. Whitten

Those members of the conference familiar with the activities of the science sections easily understand why the joint meeting of those groups was not held this afternoon. It may be difficult to explain to others that the very important work being done by those groups in union conferences had been so largely placed under the supervision of Professor John Lossen Pricer of the Illinois State Normal University that after his death on the 19th of last August there was no one who had sufficient grasp of the situation to bring the unfinished business before the present conference.

Mr. Pricer had labored long and faithfully to secure the adoption of a practical plan by which all students attending the public high schools of the state would receive instruction in the fundamentals of science which to him were among the greatest assets available in the

vast fund of educational material. An account of his activities and contributions to the solution of this problem would make a fairly complete record of the progress made since the joint conferences of the science groups were organized. It was through his efforts that a general plan was agreed upon at the 1918 conference. The fact that the six different groups agreed upon a definite working plan marked the greatest accomplishment of the joint conferences. Mr. Pricer was made the chairman of the committee whose duty it was to fill in the details of the plan. The following year he worked against all sorts of difficulties but managed to keep the work going, and his report to the conference last year received enthusiastic support. He was continued as chairman of the committee and given greater powers for getting the work done. It was hoped that this year's conference would receive a complete report. His death brought the work to a standstill. We hope that ways may be found for completing it, but no matter who completes the difficult task, credit must be given Mr. Pricer for the big part he did in securing the united effort of all concerned.

He began attending the high school conferences of the University of Illinois when the entire membership was comfortably taken care of in one of the rooms in University Hall and, I understand, missed not a single conference from that small beginning until his death. He recognized in them an opportunity for educational progress, and with a characteristic sincerity entered actively into the work. His keen insight into educational problems and his faithfulness to every obligation caused him to be held in high regard by the executive officers of the conference and gave him strong support of the general membership.

The controversy between the so-called "pure" and "applied" sciences is perhaps too close in our recent past to refer to it with safety, yet even this brief account of Mr. Pricer's relation to these conferences would seem incomplete if his attitude in that period of our evolution were not mentioned. About the time that unfortunate conflict was raging Mr. Pricer had been lead up on the mountain tops of science by some of its most worthy advocates. He saw a vision of the mission of science in education so clearly and definitely that never for a moment in all the remainder of his life did he falter or relax his effort to make his vision real in the lives of the public school students of the state. He stood firmly for what in his judgment was best and highest in science. That he was misunderstood and criticized by those who failed to appreciate his ideals was to be expected. The fires of that controversy burned out when the highly technical scientists began to give more of their time to the problems of every-day life and when the industrial colleges began to demand the highest possible technical training of their members. It was a source of much satisfaction to Mr. Pricer to live to see the line of demarkation between the different fields of science entirely obliterated. And it was

significant that when all groups felt that the time had come for a united effort to save science in the secondary schools, he was the one chosen to lead them.

While Mr. Pricer always had a particular interest in the natural sciences, it was not until about ten years ago, after he had taken his Master's degree with Professor Forbes and had done an additional year's work with Professor Hottes that he devoted his entire time to the educational aspects of biology. His work in the research laboratories proved his ability as an original investigator and won for him the confidence of the men who stand high in science. Even though his early training and his successful experience in the high schools of the state finally drew him back into the field of education he never ceased to honor the men who made the great discoveries in science and who thereby had made available, as he often expressed it, that vast fund of knowledge which brought the race out of savagery.

Mr. Pricer graduated from the Illinois State Normal University in 1899 and after eight years of teaching in the high schools of central Illinois and three years of study in the University of Illinois, he returned to that institution as head of the department of biology. Many of the young men and women who studied with him there caught much of his enthusiasm for the advancement of science and have gone out into the schools of the state with high ideals of service and well equipped with the subject matter of biology. Mr. Pricer believed it a part of his duties as a teacher to influence as many of the capable students as possible to continue their studies in the colleges and universities. His success in accomplishing this purpose was unusual and his rewards for doing so were among the most highly prized of his educational career. He realized that the customary two years course of the normal school was too short to train and equip teachers of high school science. For this reason partly, and partly for the pleasure it gave him to lead his students through the more advanced courses he was untiring in his efforts in helping to create the senior college at Normal. It is one thing to create the machinery and print programs for a college course, but it is quite a different thing to maintain standards of instruction satisfactory to the universities with which the smaller institutions must co-operate. The senior college of the Normal University has stood all of the tests required of it and it is now well established. The confidence which the university authorities had in Mr. Pricer as a man of science and as an educator and the zeal which he at all times exhibited among his colleagues were large factors in bringing about the desired result.

Some four or five years ago he became interested in the State Academy of Science. He found that organization to be composed of as worthy a body of scientists as could be found anywhere but that the results of their labors, as an organization, were not functioning effectively in any particular direction. As secretary he became respon-

sible for the programs of their annual meetings and very soon thereafter the great scientists of the state found themselves working on educational problems as well as on those of a purely scientific nature. Mr. Pricer convinced the membership that the best interest of science could not be served unless the message was carried to all the people through the agency of the public schools. Obedient to his wishes, a committee is now at work to find ways and means of accomplishing that result. The academy had become so poor financially as to be unable to publish its proceedings. Mr. Pricer at once made plans to correct that serious obstacle to the educational and scientific usefulness of the organization. He was able to interest the state department of public education, and as a result there will shortly come from the press the proceedings of the Academy of the last three years. At present the Illinois State Academy of Science is a going concern. Besides being recognized by the state government as one of our worthy institutions, it is affiliated with the American Association for the Advancement of Science and is establishing branch organizations throughout the state wherever small groups of people can be interested in banding together in the cause of science. I think that it is not too much to say that Mr. Pricer with the loyal support and co-operation of his associates put the Academy on its feet and started it on a course of usefulness.

There was a very specific reason why Mr. Pricer so completely consecrated himself to the cause of education in science for all the people, especially in those phases of science related to health. His intimate friends understood it very well. Shortly after he had returned to Normal as professor of biology the great white plague stealthily entered his home and almost ere he was aware the charming and efficient companion in the struggles of his early career and his elder daughter were stricken. It was the only blow that ever staggered him. He felt that some how or other this great tragedy in his life might have been averted had he realized the danger before it was too late. He sought solace in his work, and work was at once his salvation and the cause of his premature death. He regained the happiness of an ideal home which he so richly deserved, but he was so intense in carrying the message of health to others that he sorely neglected his own physical well-being. He availed himself of every opportunity as teacher, scientist and citizen to spread the gospel of scientific living. He endeared himself to all the good citizens of his home community by successfully organizing and executing sanitary campaigns to rid the city of its sources of contagion and its carriers of disease. His pleasing personality and persuasive manner always won for him a faithful following, but he never shifted the least responsibility which came to him as a leader. President Felmley remarked of him at the time of his departure, that he worked himself to death. I believe that it was literally true.

Not many among the large circle of Mr. Pricer's friends knew him as a business man. He, like many others engaged in public education, realized that if he ever accumulated sufficient wealth to insure comfort for his family in his declining years he would have to go outside of his profession to accomplish it. He turned his attention to the farm lands in the Mississippi bottoms in South-east Missouri. The pioneer life in that country and the prospects of a rich reward for his efforts appealed to him strongly. In a manner truly characteristic he began to spread his enthusiasm among his friends. Within a few years after being convinced that his investment was safe, honorable and profitable, he, without profit, had influenced a large number of his associates to share the experience with him. But like a number of other enterprises in which he was interested, his business project was cut short just at a time when success in a large way was within his grasp. Mr. Pricer was inherently cheerful and optimistic but to see him really happy one needed to see him on that splendid farm which but a few years ago was swamp and forest and which by many a sacrifice he had developed into a paying proposition.

It was while in South-east Missouri spending a short school vacation and attending to the business of his farms that death, without a moment's warning, overtook him. It so happened that I was in the same community at the time and it was a source of great satisfaction to me as an intimate friend of long standing to observe so many of the prominent citizens of that community pause to do him honor. The message they bade be taken to his family and friends in Illinois was one of appreciation, confidence and respect.

Mr. Pricer's work has been done in Illinois, but his wholesome influence on education has spread far beyond the boundaries of the state. In his passing the University of Illinois has lost an alumnus who did her honor both in the counsels of this conference and in the fields of higher education. The Normal School has lost a true teacher and a wise adviser who measured up in full degree to the best traditions of that institution.

The principal address of the evening was given by Professor Otis W. Caldwell, The Lincoln School of Teachers College, Columbia University, New York. Professor Caldwell's theme was THE CONTRIBUTION OF BIOLOGICAL SCIENCES TO UNIVERSAL SECONDARY EDUCATION. He spoke as follows:

Contribution of Biological Sciences to Universal Secondary Education

Otis W. Caldwell

The Lincoln School of Teachers College, Columbia University

Your program committee evidently desired to direct attention for a time to the question of what essential contributions are there which specific subjects of study may make to the proposed universal secondary education. We can not justify universal secondary education, unless we can cite worthy universal uses to which the added school years shall be given. Such worthy and universal uses can not be shown to a questioning public merely by general argumentation, but the values must be shown in the outcomes in worth-while content and in power derived from specific subjects of study and specific enterprises in which secondary pupils may engage. The emphasis is shifted, therefore, from the easily-written story concerning the extent and nature of illiteracy, ignorance and inefficiency, to the story which is much harder to write concerning the specific constructive measures which may remove illiteracy, ignorance and inefficiency. It has often been forcefully and truthfully stated that the commonwealth can not either socially or economically afford to tolerate ignorant and inefficient citizens; but we dare not be so forceful because we can not always be quite so clearly accurate when we attempt to show how certain pieces of subject-matter may surely operate in conferring scholarly and effective civic living.

The biological sciences are selected for illustrations, with no thought that they are preeminently important as sciences, nor that the sciences are more important than certain other fields of knowledge, but that this is the field in which the speaker can best cite illustrations. It is highly important that other fields of knowledge shall be presented also, in order that we may see the kinds of considerations which we think should contribute to universal secondary education. Furthermore, we do not possess either the data, nor the technique for securing adequate data to prove conclusively the place of biological sciences in universal secondary education. As in most other secondary fields we must still deal with descriptive statements in the main, though there are available some acceptable proofs which are not as yet crowned with the statistical halo of our most worthy modern educational studies.

Our secondary schools now include enough pupils and pupils of sufficiently wide social and economic representation to give us a fair basis upon which to judge the kinds of problems which universal secondary education will present. If we include the seventh and eighth grades, which may or may not now be in junior high schools, it is safe to say we are now dealing with 4,000,000 secondary pupils in the United States. These come from parentage ranging from those with almost four centuries of American life to those of but a few decades of life in America. They come from homes, ranging from palaces to box-like apartments which house several families in one suite of two or three rooms. They come clothed in the best that unlimited money can buy, to those silently suffering the elemental pangs of cold and hunger. They also represent the social, civic, economic and spiritual hopes of almost every country on Earth, and universal secondary education can not be adopted unless it can contribute to the needs of all, and at the same time conserve and develop individual needs. It would be a faulty education which would differentiate these pupils into school units which are designed to serve *one* or *another* of these groups of pupils. There is a genuine danger in a democracy, if the system of public education is avoided by those who can *financially* or *socially afford* the private school. It is significant to note that of the 15,266 persons who took the college entrance examination board's examination in 1919, only 5951 were public school pupils.

Furthermore, since a smaller percentage of the public school pupils passed this examination successfully it might be argued that public schools are doing poorer work, but it more probably means that the courses of study and methods of the two types of schools are organized and directed toward quite different ends. The situation can not be adequately explained by the fact that many public school pupils enter college upon certificate, because the colleges to which the College Entrance Board recommends pupils, do not, in the main, accept pupils upon certificate. There is a very serious need of renewed attention to the possible social and intellectual results of the renewed tendency toward sending certain types of pupils to private schools. However, it would be a faulty education which would raise the common educational level by filling the social and educational depressions of humankind by use of material secured by cutting down certain types of the race's elevations. Universal secondary education, if we are to have it, must give opportunity for individual ability and inclinations as well as purposeful education for all.

The period of American education in which we now are is one of unprecedented rethinking and new thinking in an effort to redirect and reform our materials and our procedures, so that, if possible, American education may distinctively meet the problems of America. No other country ever undertook so seriously to give so much general education to all its people. No other large country ever had its population built up in a few generations by immigration or by the descendants of those of all nations, those who had courage, fortitude, foresight and convictions strong enough to cause them to come to a new land where the measure of their achievement might be found in their own strength and character, rather than in arbitrarily set limitations of some form of social or economic caste or of governmental restriction.

Unlike any other major peoples of the Earth, we have organized an elementary school course of study of six years which we now generally require of all children. The requirement is not yet fully operative but is increasingly effective. We also have our high schools, four year, or junior and senior, but our common judgment is uncertain as to how much of this period should be required of all.

Most students of secondary education incline toward the conclusion that the subjects of study should be all or almost all required for the junior high school period, grades seven, eight and nine; also, that the subjects of study for the senior high school grades should be essentially elective by those who elect to attend the senior high school. It is a fair question for careful consideration whether this principle of required attendance should be carried to the senior high school, that is whether universal secondary education should apply only to that part of the high school in which the subjects of study are also required. This practice, if adopted, would be based upon the hypothesis that the junior high school includes those high school subjects which are requisite for the information, training, vocational and aesthetic outlook of all citizens. It is quite possible that the opportunities of the senior high school can be profitably used only by those whose special interests and abilities lead them to desire the more specialized subjects of the senior high school. Indeed, it is not yet clearly demonstrated that all the subjects of the junior high school, certainly not all parts of some of these subjects, are so organized and so taught as to be necessary for the proper education of all junior high school pupils. Much less can it be shown that the more specialized subjects of senior high school are requisite for universal education of all youth of senior high school age.

Without desiring to be classed as one who opposes universal senior high school education, I wish to express the belief that it is hasty to ask for compulsory senior high school education until our subjects of study are more nearly organized so as to meet the universal needs of those whom we expect to attend these schools. We can not as yet be too certain that even junior high school subjects are so organized as to justify the requirement that all pupils shall study

them. The subjects of study are being constantly though slowly improved, but it is socially, economically and educationally a gigantic and unprecedented proposition that we shall require all young people to remain in school through the whole high school course, and we may even lose ground by urging universally lengthened time requirements before we define more clearly the use to which the increased time shall be put.

In recognition of this great need the National Education Association established its Commission on the Reorganization of Secondary Education. This Commission consists of a general or reviewing committee, and numerous subsidiary committees, each subsidiary committee being charged with the study and reformulation, if necessary, of the proposed courses of study in a given field. The reviewing committee in cooperation with the chairmen of the subsidiary committees formulated and published a pamphlet called "Cardinal Principles of Secondary Education." After much consultation and study it was decided that the following seven main objectives are the outstanding things for which American Secondary Education exists.

(1) Health; (2) Command of fundamental processes; (3) Worthy Home membership; (4) Vocation; (5) Civic education; (6) Worthy use of leisure; (7) Ethical character. Obviously these objectives overlap, and obviously ethical character is not placed last because any one thinks it least important, for it is in all the others. It will be noted that these objectives relate directly to what the high school may do for its pupils, not to what are the essentials of the subjects of study. The essentials of a subject are those things which will meet these stated objectives. Please bear in mind that the committee does not favor class scholarship in the subjects of study, but rather that the truest high school scholarship is found in those things which contribute to these objectives. It is the firm belief of this commission that secondary education in the United States must aim at nothing less than complete and worthy living for all youth, and that therefore the objectives described herein must find place in the education of every boy and girl.

The committee on reorganization of the sciences in secondary schools, has also completed its report, which is now being printed and copies of which are now available. This report has been over seven years in the making, and is based upon hundreds of group conferences, and many careful experiments. It is not the result of ordinary office committee work, but of trial under public school conditions, so that the recommendations made are already in operation in many of the best schools. The report is essentially a record of accomplishment, not prophetic appeal.

The general relation of science as a whole to these objectives may be stated as follows: It is important that those who are ill may be cured, but it is much more important that people be so taught that they may not become ill. The control and elimination of disease, the provision of adequate hospital facilities and medical inspection, the maintenance of the public health, all necessitate widely disseminated knowledge and practice of the basic principles of personal hygiene and public sanitation. It is the duty of the secondary schools to provide such instruction for all pupils. This purpose finds realization chiefly through science and civics. Therefore health topics should be included in the sciences taught in the junior high school, and in at least the first two years of the four-year high schools.

Science touches the efficiency of the home and of life within the home at every angle. General Science, biology, physiology, physics and chemistry, all have definite services to render toward the proper organization, use, and support of home life. A great vitalizing force for science instruction can be found in the relation of these courses to intelligent home-making, management, and enjoyment. It is a serious criticism of science teaching in the past that these fundamental relationships have been so largely overlooked. These relationships apply not only to those who have the care of the home and of the

children within it, but also to such other members of the family as may be called upon to make repairs to the heating and ventilating system, to adjust the electrical appliances, or to perform any of the many services that make for an effective home. Science has devised many conveniences that make the modern home comfortable and attractive, and science knowledge is required for their full appreciation and most intelligent use. These activities should be definitely related to better ideals regarding modern home life.

Science instruction should contribute both to vocational guidance and to a broad preparation for vocation.

In the field of vocational guidance such instruction should make many valuable contributions to a more intelligent understanding of the world's work, and such an understanding should be so presented as to be of direct assistance in the wise selection of a vocation. Such knowledge should also impress students selecting certain vocations with the importance of making thorough and adequate preparation for their life work.

In the field of vocational preparation courses in shop physics, applied electricity, physics of the home, industrial and household chemistry, applied biological sciences, physiology and hygiene are of value to many students. Often a knowledge of the underlying principles increases the worker's enjoyment helping him to think about and understand the processes with which he deals. Moreover such knowledge and the interest aroused thereby may result in improving the work itself, and may result in inventions for the improvement of the work of others.

The members of a democratic society need a far greater appreciation of the part which scientifically trained men and women should perform in advancing the welfare of society. Science teaching should therefore be especially valuable in the field of citizenship because of the increased respect which the citizen should have for the expert, and should increase his ability to select experts wisely for positions requiring expert knowledge. At the same time it should afford the basis for an intelligent evaluation of the services rendered by such experts.

Furthermore, the study of science should give a more intelligent appreciation of the services rendered to society by those who are engaged in vocations of a scientific nature and occupations based upon application of science. Such appreciation of the services rendered should lead to greater respect for the worker who renders the service.

Science opens the door to many useful and pleasurable avocations. For example, photography may be taken up by many, but most intelligently by one who understands something of the nature of light, the action of lenses, the chemical changes involved in exposing, developing, and fixing plate and print. In the city and in the country, at the seashore, mountains, and elsewhere, nature is prodigal of her store of wonders. If the natural interest in these things has been developed and deepened by elementary courses in biology, botany, or zoology, not only is there added pleasure and enjoyment but the door has been opened to wider interests, and to a rapidly growing fund of valuable literature regarding science. The marvelous adaptations of plants to their environment, the march of plant progressions, the sharp competitions among the forms of animal and plant life, the history of the remote past recorded in the rocks, are topics which mean much to one whose eyes have been opened by science instruction. Trips to industrial plants to study raw materials, processes, and finished products, and visits to museums, are means of developing life-long sources of enjoyment. To have avocational value, science courses should employ methods that can be used after school days.

Science study should assist in the development of ethical character by establishing a more adequate conception of truth, and a confidence in the laws of cause and effect. Science, along with other studies that exalt truth and

establish laws, should help develop sane and sound methods of thinking upon the problems of life. The problems of science are those of life, hence no quarrel regarding transfer of training need arise.

But more specific citations of service rendered must be given if any subject makes its case as an essential part of a required educational program. What are some types of biological topics which have a proved relation to the stated educational objectives, or which may reasonably be expected to meet the objectives, or which we may readjust so that they may meet the objectives? It seems unwise to present here a list or an outline of proposed topics in a reorganized course in biology. A few citations only can be included but they will be given in some detail, first, in order that their exact nature and import may be shown, and, secondly and more important, with the hope that persons who represent other secondary subjects of study may similarly cite type topics in their fields, as showing how these fields are expected to contribute to universal secondary education. In each topic the facts of the case are presented first, then there is an indication of the educational result which has come or is expected to come from the use of the topic. We are not at this point speaking at all of method of presentation of these topics.

It is comparatively recently, indeed within the memory of many of us, when men learned that disease may be caused by the growth of small organisms, some plant and some animal. I can dimly recall the newspaper comments when Louis Pasteur and others asserted that disease may be transmitted by transmission of bacteria. Since that time, a spectacular development of useful biological knowledge has been made. People who are biologically intelligent no longer need be harrassed by some diseases, provided this knowledge has resulted in "the will to do," the intelligence and will to use the results of modern scientific knowledge. Whole commonwealths have voted funds and initiated campaigns against the mosquito, and an entire section of the country has found that intellectual achievement backed by an energized will power may hope to remove the hook-worm disease. At the time of his recent and lamented death, Major Gen. Gorgas was engaged in the first steps in no less a task than that of removing malaria and yellow fever from the Earth. Almost every American community has been made conscious of important facts in the life cycle of certain mosquitoes. The race has endured the annoyance of mosquito bites for all time for the bite is but temporarily disturbing, but malaria is not passed by so lightly. We know enough now to free any one or all of us from malaria, if only we will learn and act.

Much has been said and done in biological instruction concerning proper water and milk supplies. In most American communities there is now a distinct consciousness of the reasons for having pure milk and water. The study and control of the biology of the air-carried dust is a more difficult problem, and it is possibly more important than the highly helpful study of the health relations of water and milk. It seems safe to say that advanced research in these fields in the next few years will find the study of the dust of the air very productive. It is now known that air may carry dust particles which are so small and are electrified in such a way that gravity alone would probably never cause them to alight upon the earth. Also it is known that when the velocity of moving air is doubled, its power to carry dust is increased 64-fold.* These dust particles are mineral and biological in origin, with the percentage of biological materials almost equal to the mineral. The biological materials have an abundant representation of living organisms amongst which may be germs of tetanus, influenza, tuberculosis, etc. It may have been true that German sympathizers sold us court-plaster upon which germs of tetanus had been placed, but germs of tetanus may also be carried by dust-laden air currents, and the possibility of presence of tetanus germs upon exposed gummy surfaces will

*J. W. Redway, Mt. Vernon, N. Y., An Overlook of the Relations of Dust to Humanity. Ecology 1: 190, 192, 1920.

continue in peace as in war. Indeed the dried and pulverized excretions of animals composes a large part of the biological portion of wind-blown dust, and these particles are particularly favorable for transporting tetanus organisms. Tubercle bacilli may also be carried by currents of air and notwithstanding the germicidal action of sunlight upon moist organisms, dessicated organisms are less affected by sunlight. There are undoubted cases of tuberculosis infection by the dust from a room of a tubercular patient. As a matter of fact tubercle bacilli are rarely absent from dust that is not moving, and in city streets they are common and notable features of the disease-producing germ life. Many other organisms, both harmful and harmless are known to be component parts of air-carried dust.

What has been accomplished or may be accomplished through biological education, with materials such as those just cited? The practice of medicine is concerned chiefly with caring for those who are ill, or helping in educational campaigns in situations which have reached a critical point. It is the business of education, and primarily, though, by no means wholly of biological education, to instruct, convince and motivate the general public in matters of public health by use of biological facts and processes as they relate to community and individual health problems. Some of those present can remember a time when certain skin diseases, as the "itch" were regularly recurring disturbances. The "sulphur-and-lard" treatment which followed infection made life irksome and eventually unendurable to the organisms which caused the trouble, but neither the malady nor the "sulphur-and-lard" caused the unfortunate human being to suffer social ostracism. He was merely unfortunate. But when the community learned through its schools and otherwise that the disease bore a direct relation to filth, it soon became disgraceful for one to have the "itch," and this knowledge and the accompanying social judgment created an attitude which made every home desire to eradicate the difficulty.

We have reached almost the same stage in social evolution regarding typhoid. It is a filth disease. Each individual cannot control his environment quite so effectively against typhoid, but the community, hence its individuals, will soon be conscious of social disgrace when typhoid emerges within it, and this knowledge and consequent social judgment has greatly reduced and will sometime eradicate typhoid. The same kind of information and judgments will *sometime* remove tuberculosis, and many other dreaded diseases. It is now announced on good authority that in its earlier stages tuberculosis is definitely curable. It is also readily preventable and but a few decades of universal education by use of knowledge already possessed, and new knowledge constantly being secured, would enable men to free themselves from the ravages of the "White Plague."

Another positive phase of this type of education is essential. For example, it is believed that most all human beings have been infected with tuberculosis. Many have remained unconscious of the infection and have not suffered noticeably from it. This is because their bodies were in such healthful conditions that the germs, though beginning their growth, could not gain headway against a normally well nourished and efficiently working human body. This is but one of the very many ways of emphasizing the great importance of study and application of that phase of biology which deals with nutrition, growth and use of the human body. We now possess a middle-aged generation of human beings many of whom have enjoyed and benefited by biological instruction in nutrition and growth. It seems safe to assert that the extension of such instruction to all of the younger generation will yield a large return in preventing disease through maintenance of effectively-working human bodies.

In its contribution to command of fundamental processes biological science is peculiarly rich since it deals with life itself of which pupils are a part. Possibly one of the best illustrations relates to the world's food supply—a topic as old as human life and likely always to be the center of pointed discussions.

It has given many a teacher real pleasure to see a group of young people first catch the real meaning of chlorophyll-work in green plants. Knowing that available foods are not limitless, and that hunger and starvation are the exponents of food shortage, a graphic picture is seen when a young pupil first considers what would occur if for a single season the chlorophyll of plants would cease to operate. Over and over, for centuries and centuries have units of carbon dioxide and water returned from decaying plants and animals, been reabsorbed by plants, and made in the chemistry of the leaf again into carbohydrates, thence perhaps into proteids, and finally into protoplasm, only to break up and return again to the chlorophyll-plant, to begin again the round of carrying energy from the sunlight by means of chemistry and physics, so that life may proceed in its functions.

We were recently told that the wheat production of the United States in the 10-year period of 1909-1918 averaged 650,000,000 bushels per year more than the yearly average for the 10-year period 1849-1858. This means that men have learned how to direct the work of chlorophyll so that the world may have more and better bread. Each time we see an expanse of growing wheat or corn, we see an exponent of the progress of scientific knowledge of man's control of fundamental processes. No pupil who uses food is devoid of need for understanding such fundamental processes as these. And some pupils are thereby stimulated to desire to know more and to help direct such a gigantic food laboratory; others see the artistic or poetic setting of an essential industry; still others who may later work in offices or factories have gained an understanding of the kind of problem with which agriculturalists, horticulturalists and gardeners must deal, and finally there are some pupils who are fired by a desire to add more to what we know of such processes. Science is full of such illustrations of fundamental and universal processes which people need to know both for their own direct use and for their understanding of the work in which others engage, and as a means of discovering the fields of their possible future scholarly enterprises.

As an illustration of science and civic life and responsibility, may I cite the fact that the increasing use of applied science has carried with it increasing obligations for public instruction and public care in order that increasing injuries and deaths may not follow. The history of inventions shows that the introduction of many beneficent contributions of applied science has been followed by an increase in injuries and deaths. The pocket knife but a few generations ago became a regular accompaniment of almost every boy and man, and cut fingers and injuries in combat were increased thereby; and more recently the aeroplane, the most spectacular and fascinating of modern inventions, is still so poorly under control that there is a high degree of probability that any devotee of flying will sooner or later give his life as a sacrifice to this wonderful instrument of modern inventive science. The motorcycle is so destructive and so frequently a public nuisance that many good citizens can almost be convinced of the earthly presence of a Satanic Majesty whose embodiment appears in this noisy, ubiquitous, and fear-producing instrument. The automobile is less truly an object of scorn because almost all of us make use of it more or less frequently, but it is in total far more of a biological problem than is the motorcycle. It is stated* that in 1919 an average of $2\frac{1}{2}$ persons were injured and 1 killed by automobiles for each 1000 inhabitants in the United States. This means an average of $1\frac{1}{3}$ persons killed for each hour of the whole year 1919. At the present rate there will be an increase of 10% of killed and injured from this cause in 1920. Of these accidents 90% occur in public highways. The fact that the percentage of increase of killed and injured does not quite keep pace with the percentage of increase of numbers of automobiles in use does not necessarily mean that we are educated to be more careful, but may in part be due to the gradual or perhaps hasty elimination of those persons who

*C. M. Talbert, St. Louis, Chairman Safety Section of National Safety Council.

do not readily learn the necessary lessons which accompany the advance of science. Possibly a combination of natural and artificial selection may be effecting a change in our social composition as relates to this question. If all of those in this audience who have driven automobiles for five years or more should report upon their personal accidents and injuries to themselves or families, we should doubtless find a high percentage of personal experience with the problem to which I am referring.

Obviously these questions are of great importance in the universal education of people who in any phase of living need to be protected against injury. Some one may say these matters are cared for by constant admonitions given to people younger than those in the high school. But mature citizens, in their personal care and above all in their discharge of civic duties need an intelligence about these situations which surpasses admonition—indeed which makes the correct basis for the admonitions which are given to younger persons. It may also be said that this topic properly belongs in the course in civics, or possibly in some other social study. May I venture two assertions in reply. Biological studies for universal secondary education must be largely social in their objective; and secondly, the true motivation of such a study comes not primarily through a knowledge of the laws regulating traffic, but through a keen sense of the life or biological significance of the situations to which these laws relate. However, it is not of fundamental importance whether such studies shall appear under the name of biological science, or civics or any other particular subject which deals with adjustment to environment or adjusting environment to us, as it is that such studies shall appear definitely and effectively somewhere in any scheme of education which is designed for all pupils of high school age.

In closing this incomplete discussion, may I express the opinion that we need universal secondary education through the junior high school period. Our concern need not be so great just now, however, as to whether we secure immediate legislation enforcing universal secondary education as that our subjects of study and our school procedures shall be so redirected and reformed that these subjects and procedures shall be surely worthwhile for all pupils of secondary school age. Difficult and slow as is progressive school legislation, much more difficult and slow are the processes of reorganization of school subjects and methods in the effort to make an increased school life really productive of the educational objectives which must be attained in American education. This is a task which is sufficiently important, fundamental, and enduring to justify the most thoughtful efforts of all who by inclinations, training and ideals are willing to give themselves to it.

4. SATURDAY MORNING

The Conference assembled at the Auditorium at 8:30 Saturday morning for the closing session with Dean C. E. Chadsey presiding. Reports of committees were first in order. Mr. Clyde A. Brown, Vocational Guidance Bureau, Chicago, and acting chairman of the Committee on Continuation and Part Time Schools gave a brief account of the work of his Committee and submitted a report on the legislation needed in order to make the Continuation School Law effective. Changes needed in the Child Labor Act were first pointed out, such as the extension of the compulsory age limit to eighteen years instead of sixteen. Changes in the form and manner of issuance of employment certificates, including vocation certificates were also indicated.

Other minor changes required in order to make these laws conform to the requirements of the Continuation School Law were also noted.

An amendment to the Continuation School Law, more clearly defining the aim and purpose of the law was also proposed in the form of a substitution for Section 2 of that law. The form of definition proposed is as follows:

Definition of a Continuation School

Proposed as an Amendment of the Illinois Law adopted two years ago for the establishment of continuation schools.

A Substitution for Section 2

A continuation school, as the term is herein used, shall be construed to mean a school maintained and conducted at public expense for the purpose of giving to those youths between the ages of 14 and 18 inclusive who find it necessary to become wage earners either in self support or in support of their families, an education such as will fit them to perform intelligently the duties of citizenship.

To this end the curriculum of such schools shall consist, primarily, of courses of instruction in the English language, United States History, and Civics, together with such arts and sciences within the time limits provided, as shall better fit those required to attend them for the pursuit of their chosen vocations.

Such a school, within the terms and provisions of this act, may consist of either one or more separate school units within a given system of public schools operating under a board of directors or board of education, as defined by the general school law and the laws providing for township and community high schools, or schools operating under special charter; or it may be a group or one or more classes in any ordinary school unit, either of elementary or high school grade as the situation may demand. Provided, that in case of township and community high school districts and non-high school districts, the school units or classes thus organized shall be controlled and their financing provided for by the respective boards of such districts.

Superintendent D. Walter Potts, of East St. Louis, made a report, as a member of the same committee, on the problem of financing continuation schools. A synopsis of this report follows:

Synopsis of Report Made at the High School Conference by D. Walter Potts, Member of Committee on Part-Time Schools—Finance

After notification of my appointment as a member of the committee I was instructed to make an investigation to ascertain to what extent part-time schools had been organized throughout the state under the permissive mandatory act, and to secure other data relative to the financial situation in the various districts.

Learning that the State Department had recommended that part-time schools be organized and maintained by Township or Community high schools, in districts under dual control, I addressed a questionnaire to the larger districts in the state under unit control. This questionnaire contained the following questions:

1. Have you organized part-time schools?
2. If not, why not?
3. Do you contemplate organizing part-time schools in the immediate future?
4. If not, why not?
5. If finances do not permit the organization of part-time schools, do you favor a special tax for this purpose, or an increase in the general tax?

The school administrators in the state were very prompt in replying to this questionnaire and a tabulation of the answers revealed that:

1. That Chicago, Rockford and Springfield were the only cities under unit control which had organized part-time schools.

2. All other districts under unit control reported that inadequate financial resources prevented the organization of part-time schools.

3. That part-time schools would not be organized until revenue for this purpose was available.

4. There was an even division of opinion as to the advisability of securing a special tax for the purpose of organizing and maintaining part-time schools; fifty per cent of those reporting favored a special tax, while fifty per cent favored an increase in the general tax. Those favoring a special tax argued that unless a special tax was levied that the present demands for more revenue for general school purposes would, to a large extent, prevent the utilization of additional revenue for other than regular school purposes.

At the first meeting of the committee the above report was submitted and immediately thereafter the question arose: Have the districts reporting their inability to organize part-time schools, because of inadequate revenue, submitted to a vote of the people the proposition to increase the general school revenues, as provided by the last General Assembly?

Unable to answer this question I immediately prepared a second questionnaire requesting this specific information. The returns showed that in every case, save one, each district reporting had submitted the proposition in a referendum vote, and that the same had carried by a vote of from four to one, to fifty to one. Many replies were received stating that when this proposition was submitted to the people, that it was the understanding that the increased revenues were to be used for general school purposes, and that the part-time schools, at that time, were not considered. Many also stated that with the increased revenues secured under the referendum that the finances were still inadequate and that more revenue must be secured if the efficiency of the schools were to be maintained, and the usual provision made for the usual school expansion.

At the second meeting of the committee the replies to the second questionnaire were submitted and furnished material for long and serious discussion. After the discussion I was instructed to prepare a third questionnaire to secure definite data relative to the number of pupils of the three classes for whom provision should be made were the law now in full operation.

Following this meeting I discussed the proposition with our Board of Education and suggested that when our annual school census was taken that the enumerator be instructed to furnish us with data giving the number of minors between 14 and 16, 16 and 17, and 17 and 18 years of age, who are not graduates of the high school, and who have severed their school relations. The Board of Education authorized that this be done and we held several conferences with the enumerator explaining in detail the information we desired and why this information was important.

At the conclusion of the school census the enumerator reported 592 minors between the ages of 14 and 18 who are eligible to enrollment in the part-time school. Our records show that during the preceding year we issued and veri-

fied ages of 512 minors who had secured employment. Realizing the inaccuracy of the records furnished by the enumerator we asked for a conference; he explained that he knew his records were inaccurate, but they were the best he could furnish under the circumstances. He stated that when households were questioned as to the number of minors residing therein between the ages of 14 and 16, 16 and 17, 17 and 18, who were not graduates of a high school and who were not attending school, that the members of the households were under the impression that a sinister motive prompted the question and answers were given as a matter of protection.

The State of Utah has solved this problem by requiring members of households to furnish under oath to census enumerators all necessary information relative to minors and their ages, said information being secured for the purpose of making adequate preparations for their reception in part-time schools.

This experience reminds us that the provision of the Child Labor Law requiring that employment certificates be issued to minors between 14 and 16 years of age, must, if part-time schools are to function efficiently, be amended to include all minors between 14 and 18 years of age. Without this additional provision it will be very difficult, if not impossible, for school authorities to keep in touch with minors between the ages of 16 and 18 who are enrolled or should be enrolled in part-time schools.

In harmony with instructions received I prepared a third questionnaire requesting the following information:

1. Number of pupils between 14 and 16 eligible to enrollment in part-time schools.
2. Number of pupils between 16 and 17 eligible to enrollment in part-time schools.
3. Number of pupils between 17 and 18 eligible to enrollment in part-time schools.
4. Per capita cost for high school instruction.
5. Total revenue needed based upon per capita cost to maintain part-time schools, admitting all pupils eligible to enrollment between 14 and 18 years of age.
6. One-half equalized assessed valuation of property in district.
7. Rate needed to supply sufficient funds to maintain part-time schools, exclusive of supervision, equipment, building fund, etc.

Before forwarding this questionnaire we made a careful investigation of the records in our office and forwarded the results of the investigation, as a supplement to the questionnaire, giving the method whereby the data for East St. Louis was secured.

From 1905 to date we have maintained an alphabetical card index record of all employment certificates issued. To secure the number of pupils who had secured employment certificates, and who are eligible to enrollment in part-time schools, we made a careful examination with the following results:

Number of pupils between 14 and 16 eligible to enrollment in part-time schools	470
Number of pupils between 16 and 17 eligible to enrollment in part-time schools	466
Number of pupils between 17 and 18 eligible to enrollment in part-time schools	362
Total	<u>\$1298</u>

This result does not reflect the exact conditions for the following reasons:

1. Some pupils to whom employment certificates have been issued may have left the city, and certificates have not been returned, regardless of provisions requiring their return.

2. Some pupils between 16 and 18 have stopped school and secured employment, and to these no employment certificates were issued, although many of their ages were verified.

3. Pupils between 16 and 18 have moved to the city from other communities, secured employment and have not been asked to have their ages verified.

With this consideration it is reasonable to suppose that our total of 1298 pupils eligible to enrollment in part-time schools is less than the actual number—just how much less it is difficult to ascertain without an accurate census.

With these facts before us we conclude that our record of 1298 pupils eligible to enrollment in part-time schools may include only the minimum number, therefore the total estimated cost for full time instruction is too low.

The law providing for instruction in part-time schools reads as follows:

1. Those subjects usually taught in the public schools, so as to permit the students in the continuation school classes to continue their education from the point where they left it in order to go to work.
2. Civic and vocation subjects; and
3. Those subjects which supplement the daily occupations of the students.

Our interpretation of the law is that there is no intention of making part-time schools an appendix to the schools as now organized. Boys and girls who have severed their school relations because of financial pressure, or because they were not conscious of intellectual growth hence became restless for an opportunity for intellectual and physical expression in the busy thoroughfares of the business world—these boys and girls—as we understand it—are not to be forced into the class room and there to continue specifically the work whose character was responsible for their dissatisfaction and prolonged leave of absence.

With this hopeful interpretation in mind, we computed the cost for instruction for full time in these part-time schools. We do not anticipate that provisions may be made whereby every boy and girl will wish to continue their educational preparation, but the percentage should be large if the part-time schools are organized to meet the immediate as well as the future needs of the pupils.

Since the part-time school attendance must be at least 8 hours per week, and the usual time for full attendance upon the schools as now conducted is approximately 30 hours per week, the minimum cost for instruction for minimum attendance for part-time pupils will be one-third or one-fourth the cost for full time attendance. Since it is impossible to estimate the attendance of each pupil who will be enrolled in part-time schools, we based our estimates upon full time attendance; the actual cost will be between the minimum and maximum cost.

Another point which should not be overlooked in estimating the net amount to be secured with which part-time schools are to be conducted is that an allowance of 2% for collection of taxes must be made, and also deductions on account of bankruptcies, removals, etc., etc., must be considered.

Perhaps few districts are prepared to conduct part-time schools with the present building or educational equipment. Some communities are making heroic efforts to comply with the letter of the law by requiring pupils in part-time classes to report before the usual hour for the school to open and others to

attend school after the usual hours for schools to close. Some districts require pupils to attend Saturday morning classes for the reason that the Manual Training and Domestic Economy departments are not utilized at that time by regular pupils in the schools.

We are in complete sympathy with this arrangement, providing this plan would be followed if ample financial means were available; if this plan is in operation largely to fulfill the letter of the law, and without serious consideration of the various aptitudes and capacities of the boys and girls in attendance, then we do not favor the enactment of a law for educational inspiration and preparation, then penalize the boys and girls who are forced to attend part-time schools.

Communities making such heroic efforts to comply with the law are to be commended for their efforts, but the danger as we see it of conducting the part-time school on this basis is that the real purpose and possibilities of the part-time school may not be realized and the objectives placed on so low a level that the reaction which under such conditions will probably follow will prove detrimental to this potential and progressive legislation.

In justice to the communities where part-time schools are to be organized; in justice to the boys and girls who are forced to attend said schools; in justice to the people who provide the funds for the maintenance of part-time schools; in justice to the cause of education and for the general welfare of the community the situation demands that funds be provided for:

1. Adequate equipment to meet the needs as specified under the third provision of the law relative to instruction.
2. Adequate building facilities, constructed to meet the needs of the pupils for whose benefit the law was enacted.
3. Adequate funds to employ a director, supervisor or field agent of this work, and an adequate and efficient corps of teachers who understand youth and who are in sympathy with the part time attendance law.

For purposes of study and comparison the following data is submitted:

School	14-16	16-17	17-18	P. C. C.	Needed	One-Half E. V. P.	Rate
East St. Louis	470	466	362	\$110.00	\$142,780	\$28,000,000	.0055
Bloomington	160	228	290	110.00	74,580	14,361,365	.005
Champaign	110	60	60	110.00	25,300	7,605,000	.005
Belleville	300	175	168	65.00	41,795	7,522,000	.005
Morris	70	81	74	90.00	6,000	2,400,000	.008
Freeport	120	73	67	100.00	26,000	8,500,000	.003
La Salle	225	165	180	65.00	37,050	4,000,845	.009
Aurora	1000	500	500	144.00	288,000	10,000,000	.008
Kankakee	170	50	77	75.00	25,245	6,928,290	.003
Edwardsville	79	73	60	91.00	19,355	2,762,448	.007
Kewanee	203	156	184	82.00	44,526	4,600,000	.009
Cicero	697	739	609	65.00	132,925	10,454,000	.012
Elgin	800	400	400	120.00	192,000	14,000,000	.013
Canton	51	50	42	75.00	10,725	5,000,000	.002
Hillsboro	24	60	42	90.00	11,340	1,685,000	.006
Galesburg	69	64	58	88.00	16,808	11,656,296	.001
Rock Island	260	241	228	100.00	72,900	12,000,000	.006
Springfield	483	634	670	105.00	187,637	30,000,000	.006
Jacksonville	100	100	100	100.00	30,000	6,200,000	.004
Taylorville	200	100	100		16,000	4,000,000	.004
Beardstown	48	22	20	80.00	6,400	2,800,000	.002
Rockford	143	721	936	102.50	184,500	40,000,000	.004
Moline	206	99	102	102.00	41,514	12,095,159	.003
Decatur	234	208	207	100.00	64,900	16,579,000	.004
Blue Island	20	22	17	155.00	91,145	2,200,000	.004

The report from Blue Island includes only those minors living and employed in Blue Island and eligible to enrollment in part-time schools. Blue Island has many minors eligible to enrollment in part-time schools, but many of these minors are employed in Chicago, and the report does not include this

number. This point of residence in one district and employment in another has furnished a basis for some interesting discussions.

Chicago estimates that by September, 1923, there will be 92,433 pupils eligible to enrollment in part-time schools at a minimum cost for instruction based upon a minimum attendance of eight hours per week of \$2,098,500.

The Smith-Hughes law provides for a return of 50% of the funds expended for instruction, providing the work accomplished meets with national and state approval. If all districts in the state organize part-time schools the funds available for this purpose will constitute but a small fraction of the expense for instruction, and the law contemplates this situation when it provides that when the funds are inadequate the distribution shall be made upon a percentage basis; further, there is no assurance that all of the work which communities desire to introduce into part-time schools will be accepted for credit under the Smith-Hughes Law.

The enactment and proper observance of the law providing for the organization of part-time schools contemplates a better individual and community preparation for service and for intelligent living, higher standards of general efficiency and a better educated citizenry. Failure on the part of any community to comply with the spirit of the law means retrogression through inactivity, but until ways and means are provided for the organization and maintenance of these schools a large number of districts must of necessity be forced into the inactive group.

It is clearly evident that districts under unit control are financially handicapped in maintaining the schools as now organized and that inadequate funds prevent the school expansion which should accompany increase in population. Districts under unit control cannot organize and maintain part-time schools as contemplated under the law without seriously affecting the efficiency of the schools as now organized, and without placing the part-time schools on a level wholly inadequate to meet the needs of the boys and girls whose welfare they are to serve. It is further evident that in districts under dual control, should it be decided that the elementary schools must bear their proportion of the expenses of part-time schools for educating minors who have not completed the elementary school work, that the schools in these districts will also suffer if attempts are made to maintain the efficiency of the regular day schools and in addition organize and maintain part-time schools on a basis commensurate with the possibilities of part-time education.

November 20th, 1920.

The reports from this Committee were accepted and the Committee continued.

Mr. R. L. Sandwick, of Highland Park, followed with a report, as Chairman, of the Organizing and Advisory Committee in Curriculum Reconstruction. This report follows:

Report of Organizing and Advisory Committee

Nov. 30, 1920.

The Advisory Committee for Curriculum Reconstruction recommend the following as objectives in secondary education: (1) health, (2) wealth, (3) association, (4) citizenship, (5) ethical character, (6) worthy use of leisure (7) beauty. The committee also recommends that two types of study and investigation be undertaken the coming year: (1) an analysis of these major objectives into units of workable size, (2) a study of the contribution which each subject of instruction makes to these objectives.

Since principles and superintendents are in the habit of viewing education in the large, we would suggest that the Administrative Section undertake the work of analyzing the major objectives. By study and discussion with their teachers and with groups of thoughtful people in their several communities, we believe that principals may be enabled to contribute much to the analysis, and lay a broad and sure foundation for the improvement of high school education.

While the principals take the leadership in this work of thus formulating the high school objectives, your committee recommends that teachers in the several departments of instruction take the lead in studying the objective or objectives which each of their several subjects aims to meet. Thus at last when the objectives have all been formulated we may also know how far our present system of education goes in the direction of those objectives. At the 1919 Conference there were suggested a number of studies and projects suitable for this work in various subjects of instruction.

We recommend that the Conference put itself on record as supporting the Director in continuing the work of Curriculum Reconstruction.

In order that principals may understand what is meant by the expression, "analysis of major objectives," the Committee has attached to this report a partial and preliminary analysis of the major objective, *association*. This is not thought to be in the least final or authoritative. It merely indicates a method of procedure.

A. G. CAPPS,
H. G. SCHMIDT,
B. FRANK BROWN,
BENJ. F. BUCK,
R. O. STOOFS,
R. L. SANDWICK, *Chairman Committee.*

In connection with the above report Mr. Sandwick submitted the following as a suggestive analysis of the objective Association:

Association (A Partial and Preliminary Analysis)

(Definition: Association in a democracy is the voluntary grouping of free men to accomplish a common end or purpose.)

- I. Right relations among men which promote happy associations in all departments of life.
 1. Personal acceptability and influence thru:
 - a. Speech, oral and written, vocabulary, enunciation, voice.
 - b. Manner: bearing, deportment, good manners.
 - c. Personal appearance: dress, posture, etc.
 2. Appreciation of others leading to:
 - a. Goodwill and courtesy.
 - b. Service to others (the "good turn" habit).
 - c. Honesty, truth, justice, respect for the rights of others.
 - d. Trust in others.
 - e. Good cheer.
 - f. Willingness to forget an injury to oneself.
 - g. Control of primitive instincts and emotions: anger, envy, pride, etc.
 - h. Wider group consciousness.
 3. Knowledge of human nature including elementary psychology.

II. Association for government.

1. Application of 1 above to civic relations.
2. Special principles for good citizenship.
 - a. Appreciation of country and community (patriotism, public spirit).
 - b. Appreciation of personal responsibility for government.
 - c. Respect for the law and submission to law and authority.
 - d. Respect and honor for good officials.
 - e. Knowledge of government and law.
 - f. Knowledge of mob psychology.
 - g. Knowledge of rules of order and procedure in public meetings.
 - h. The habit of discussing public men and public measures sanely.
 - i. The habit of working for the community without pay.
 - j. The practice of voting and participating in public elections.
 - k. Knowledge and experience in present-day methods of molding public opinion.

III. Association for industry.

1. Application of 1 above to economic relations.
2. Special principles for industrial associations.
 - a. Knowledge and appreciation of man's economic interdependence and of the need of cooperation.
 - b. Knowledge and appreciation of the service element in industry that makes industry philanthropic.
 - c. Appreciation of one's personal responsibility.
 1. For the success of business.
 2. For the safety and welfare of employees and
 - d. Knowledge that will permit an individual to find his proper place in industry with reference to his tastes and capacity.
 - e. The habit of reading and discussing economic problems of the day.
 - f. The habit of working both with mind and muscles.

IV. Association within the family.

1. Application of 1 above to family relations.
2. Special principles for home associations:
 - a. Appreciation of the home.
 - b. Appreciation of one's personal responsibility to make the home happy.
 - c. Appreciation of what one owes to one's parents.
 - d. Recognition of parental authority.
 - e. Recognition of the pleasures of home life: reading, conversation, music, games, etc.
 - f. Habit of service to others in the home.

V. Association for recreation and sport.

1. Application of 1 above to sports.
2. Special principles applicable to sports.
 - a. Appreciation of the value of active participation in games.
 - b. Recognition of the evils of gambling.
 - c. Playing within the rules. Development of a proper code of sportsmanship.
 - d. Knowledge of proper sports for advancing years.
 - e. Habit of playing with others rather than merely looking on.

VI. Boy and girl associations.

1. Application of 1 above.
2. Special principles to govern such associations.

- a. Knowledge and practice of proper conduct in the presence of the opposite sex.
 - b. Knowledge of entertainment suited to social gatherings, and ability to participate in entertaining others.
 - c. Appreciation of modesty and purity.
 - d. Knowledge of the qualifications necessary for proper friendships.
 - e. Habit of choosing good associates.
- VII. Church associations.
 - 1. Application of 1 above.
 - 2. Special principles for church associations.
 - a. Appreciation of religion.
 - b. Appreciation of the value of religious association.
 - c. The habit of church attendance.
- VIII. Association in organizations to promote public welfare: such as women's clubs, civic improvement clubs, charitable organizations, trade unions, boards of trade, and fraternal organizations.
 - 1. Application of 1 above to public welfare organizations.
 - 2. Special principles.
 - a. Knowledge and appreciation of the organization and work of these groups.
 - b. Practice in school organizations for public welfare.
- IX. Association growing out of interracial and international relations.
 - 1. Special need of this in America for Americanization and for peace, both internal and external.
 - 2. Application of 1 to these wider circles of association.
 - 3. Special principles.
 - a. Knowledge of other peoples and of what we owe to them.
 - b. The habit of showing respect and kindness to the foreigner in our midst.
 - c. History of efforts to secure international peace.
 - d. Knowledge and appreciation of the heroes of peace.
- X. Association in organizations within the school, such as the clubs for debating, music, dramatics, science, languages, etc.
 - 1. Application of 1 above to these associations.
 - 2. Direct promotion of special principles for association in citizenship, industry, sport, international associations through the school organizations.

Please help to criticize, correct, and complete this analysis; in a similar way analyze the other major objectives.

The report of the committee was accepted and the committee continued.

Principal H. G. Schmidt of Belleville, next read a paper on An Analysis of Wealth as An Objective.

The leading feature of the morning was an address by Principal Thomas J. McCormack, of La Salle, on CIVIC EDUCATION. This address follows:

Civic Education

By Thomas J. McCormack, LaSalle, Illinois

A straw-ballot was cast by the students of the LaSalle-Peru Township High School in the week just prior to the recent presidential election, and of the questions voted on, the two leading issues were: first, the choice of president; and secondly, the acceptance or rejection of the League of Nations. Harding was elected (our community is normally Democratic), by a majority of 10 to 1. When I announced the decision, the Assembly Hall clapped. The League of Nations was done to death by a majority of 40 to 1. When I announced that result, a howl of exultant derision arose from the throats of the future shapers of our world-policies, and shook with long-reverberating echoes the academic rafters. It was the gloating, automatic roar of triumphant democracy rejoicing at the defeat of the idols of idealism. I was the only mourner at the obsequies. For eight years past I had been known publicly as an ardent and outspoken champion of President Wilson's policies, and the twelve votes cast for the League were, I verily believe, the reluctant gifts of twelve loyal and soft-hearted students who secretly sorrowed for my impending immolation.

But the lesson of the tragedy remains. For three years prior to the solemn referendum just noted, we, the faculty, had ungeared the entire educational machinery of the school, had reconstructed its constituent parts into an engine for the understanding of the world's great civic, political, and economic problems, and had subordinated the traditional objectives of our curriculum to the modern aim of reaching cosmopolitan breadth, deeper political understanding, greater racial sympathy and charity of attitude, and of establishing the faith that the destiny of the world could rest secure with an educated democracy. We had adopted the crawfish method of teaching history and had burrowed valiantly backwards for light through the dark abysses of time; we had looked at the history of the world from the sociologist's point of view and had presented the cultural, institutional, and political development of the race, after the manner of Mr. H. G. Wells, through texts written long before his appeared. In our upper English classes we had read such books as Davis's "Roots of the War," and in our lower had studied the ethics of the ever-widening group. We had emphasized the national and the larger group-consciousness through a half-dozen traditional and improvised studies and activities. We had emotionalized and inoculated with the big-group virus our agriculture and commerce, had taught Swedish gymnastics and Gallic cookery, and to such moribund subjects as mathematics, science, art, and music, I had myself by appalling effort lent a halo of cosmopolitan light that even the unregenerate and the unseeing confessed was blinding. Finally, outright, we taught the League of Nations, and held aloft, steadily and luminously, the Ark of the Covenant—Article X. Lovingly and ardently I labored to rear in one of the waste cultural areas of Illinois a miniature City of God, wherein, on a throne of golden opinions, I should repose, transfigured and justified, a modern Saint Augustine. But the day of Judgment, the day of wrath, which was the plebiscite, came, and the disciples of Saint Augustine ejected the false prophet, and set up, by a vote of 40 to 1, the brazen images of Lodge, Borah and Johnson. Again the rare common sense of American democracy had vindicated itself, again its instinctive, unaided, inexplicable, mystic grasp of political and social truth had shattered the fabrics of pedantry and academic sophistry. *Vox populi, vox dei et veritatis.*

DEMOCRACY AND THE TRUTH

Many lessons may be drawn from this episode, and similar episodes could be multiplied indefinitely. But one will serve my purpose,—one which forces me to ask with Pontius Pilate, "What is the truth?"—especially truth, political, social, ethical, and economic? Is it an ultimate, definite, capturable reality—

the outcome of well-defined plans of inquiry? Or is it only a figurative phase of an ever-growing, changing fabric, a temporary adjustment in the unending social flux? And, Who possesses it? Does it reside in the ballot? Is it the voice of the many or the voice of the few? And if the creation of the few, is it only through chicanery, subterfuge, and deceptive propaganda that it can be realized via the circuitous channels of the ballot? And, further, if social and political truth exists and is attainable, is it desirable that it be realized and enforced now, or must we impatiently wait for the time when all shall be educated to see it and shall return it to us, obsolete and impotent, but still with the stamp of popular approval?

We are dangerously near autocracy at this point. Even democracy has compromised on this fundamental question and has said, first, that mooted truth shall be enforced truth not when all have seen and accepted it but when a majority has accepted it, and, secondly, that a political doctrine shall be converted into a working reality as soon as the representative experts of a democracy have seen and sanctioned it. The first compromise gave us our new nationalism ("Our Country! May she always be right; but our Country, right or wrong"); and the second compromise gave us the boons of prohibition and woman suffrage, without the intermediary of a solemn referendum. Autocracy has never been much else than the speeding up of the processes of democracy, an impatience to give to the people early the blessings that they themselves would be bound to adopt late; and this was doubtless the origin of Mr. Wilson's solicitude anent the Versailles Treaty and of Mr. Roosevelt's impetuosity concerning all the problems of the universe. These men were convinced they possessed the truth, and marvelled that the world hesitated to accept it. Is truth a question of numbers? It has never been so admitted. "The reasoned opinion of one man who sees and knows," said Galileo, the founder of modern science, "is worth more than the opinion of 100,000 who are blind and ignorant." "To adopt universal suffrage," said Bismarck, "is like committing the management of a household to the votes of its children." From Plato and Aristotle to the French critic, Emile Faguet, every writer on politics has deplored the ignorance and ineptitude of democracy; and the vivid consciousness of this situation in the minds of a long series of astute intellects led to the staging of the last experiment in political efficiency—the Prussian autocracy. "Public opinion always contains some truth," said one of them, Hegel, "but truth falsely expressed. To find the truth is the work of the great political thinkers. We must not ask the people what they think; we must tell the people what they think." And subtly but forcibly, with all the machinery of modern communication, that is what liberal America is doing today. The doctrine of Papal Infallibility is merely one of the acute and conspicuous forms that this fact has taken: only the expert knows, only the men who have steeped themselves in experience, history, and literature, who have felt the gruelling touch of life know or have judgment, can know or can have judgment; the knowledge of others is reflexion, mimicry, knowledge by proxy, belief, faith. Even where universal suffrage decides, it decides simply between the decisions that the powerful in thought, the gifted in expression, and the quick in action put forward for alternative acceptance; and liberty only too often appears as the power to choose our particular form of enslavement.

And what certainty resides in these acknowledged repositories of the truth? No group of persons in the United States is better qualified by experience, training and natural ability to give judgment on desirable American policies than President Wilson, Elihu Root, Mr. Taft, Senator Lodge, and President Lowell; yet these statesmen disagree, not only by groups, but individually. I once knew two gentlemen, university-trained men, of great scientific and civic experience, who were partners in an industry that under the protective tariff brought them both great wealth; yet one was a rabid free-trader and the other a violent protectionist, and each expressed nauseating contempt of the poverty of the other's

political thought. Examples could be multiplied indefinitely; entire books could be written on the subject; even Jonah knew these facts; yet simple minds exist today who believe that through the teaching of civics and history and sociology in high schools the knowledge and the mastery of the political and social world will come which was wanting to Lloyd George and Clemenceau.

THE CLASSICAL DEFINITION OF DEMOCRACY

It was the boast of Pericles, the representative of the original classic democracy, that Athens, if it did not make all its people constructive leaders of political thought and action, at least so educated its citizens as to make them all competent judges of the issues; and that ideal has hovered through the centuries as the ultimate goal of popular democratic education. It involves two objectives: one, education for leadership, and, two, education for appreciation,—active, constructive guidance and passive but discriminative approval; just as we teach music on the one hand to evoke creative talent and on the other to train appreciative, receptive, and approving audiences. Last summer I studied a representative multitude in New York watching Babe Ruth make a home-run; a little later I saw the descendants of republican Greece and imperial Rome in Southern France preparing for a bull-fight; and only two days ago I observed in my own community with cultural trepidation a gum-chewing hysterical mob inciting to mutual annihilation two teams of indoor baseball. And all the while I was wondering how long the evolution that Pericles foreshadowed would take, till I suddenly remembered that a thousand years are but as a day in the eyes of the Lord, and that the Republican Party had been out of power for eight years. And then I took heart and faith.

Many proposals have been made to stabilize and to fix the stages of this seemingly interminable process of evolution toward the ultimate educational ideal: universal education for democratic leadership; and universal education for political appreciation. Many compromises have been suggested for giving weight to the opinion of the trained and the thoughtful and for minimizing the influences of the ignorant. Plural voting has been adopted in some countries as a premium both for property-holding and for attainments in political scholarship; while as far back as the 'sixties Bluntschli, the celebrated German publicist, proposed as a condition precedent to the right of ballot an examination followed by a civic first communion, a sort of politico-religious ceremony of initiation into the mysteries of political adulthood. Some such an amendment to our Constitution might be as important for the political future of our nation as those relating to the infallibility of the feminine mind or to the efficacy of a moonshine-illuminated secular drought.

But we must temper the shorn lamb of democracy to the winds of fact. We have universal and bi-sexual suffrage, and we must address ourselves as educators to the problem as it exists—we must carry the rush-light that we have unflinchingly to the denizens of the night and multiply its radiations a million-fold in the darkened jungles of our present embryonic political intelligence.

As to methods I have little to add to what I have already said elsewhere* or to what exists in our periodical literature and formal texts in embarrassing plentitude. A host of investigators and experimenters have fallen upon this problem. It is admitted that the core of our modern curricula must be composed of the studies that are concerned with man's mastery and control of himself and of his human and material environment. These embrace history for perspective and institutional judgment, for the concepts of growth and constructive change, and for the light it throws on the needful terms; sociology, for its

*"On the Need of a General Social Science," *School & Home Education* (Bloomington, Ill.), March, 1919, and in the *Second Year Book of the National Association of Secondary School Principals for 1919*, H. V. Church, Cicero, Ill.

new and powerful notions of the structure, role, function, and psychology of the group; ethics for its norms of personal and social conduct, for its theories of the objectives of life; civics proper, for its descriptions of the structure, functions and offices of the state; and economics, and its related sciences, for knowledge and for control of the industrial, commercial and financial fabric of life. A tremendous program, which would call to its aid all of science for its support and all of literature for its energizing! An appalling task for the administrator who is asked to impart to the adolescent in the limited years of secondary education all the dynamic knowledge and all the automatic habits that normally form the equipment of talented maturity. The only escape from the embarrassment is economy, concentration, elimination, cooperative search for the irreducible minimum, the fixing of objectives, and the adoption of a few central all-energizing, all-illuminating principles. I shall essay to present one or two of these.

ETHICS AND THE QUEST FOR VALUES

From whatever side we approach this problem of rationalizing and economizing the educational curriculum, one science, one point of view, insistentlly obtrudes itself upon our notice, whether we recognize it by name or miscall it by a new terminology. It is the science of ethics, the science of the values of life, the science of objectives, of ends, the science of appreciative judgments, and of the norms of personal and social conduct. It has recently been overshadowed, supplanted, or absorbed by sociology and by the new concepts and terms that this recent investigation of human experience, its functions and its meanings, has brought; but in its age-old form, it still lies nearer than the new formulations to traditional thought and to the hearts of the people, and no problem of educational technology is more pressing than that of equating its deep-rooted historic thought to the new concepts and of pouring its obsolescent wine into new sociologic and pedagogic bottles.

Life and its experiences are recorded in history, in literature, and in the activities of industry and business, of art, and of science. For several thousand years religion, philosophy, and especially that branch of the latter known as ethics, have been analyzing these experiences and endeavoring to discover what it is that makes life worth living and enduring and what are the ideals and objectives to be sought and to be realized in the perfect human existence. It is the age-long *quest for values*, for the classification of values, for the assembling of values in the right perspective, and for the assigning to each value or objective so discovered its rightful place in the scale of human ends, as well as for determining the proportionate share of attention each should claim when declared fit to be incorporated in the rational human life.

Now, the upshot of all this inquiry has been, in one form or another, and under terms more or less varying, the discovery and the formulation of two general classes of values, or desirable qualities, rewards and satisfactions, which it is permissible for the rational life to absorb or annex.

MATERIAL VALUES

First there are the material values, wealth, property, physical goods, shelter, clothing, means of transportation, and all the sensual, carnal joys that come from their possession. These values are the basis and support of all existence and are the condition precedent to the obtaining and to the enjoyment of the second class of values later to be enumerated. But the fundamental and far-reaching extent and import of these material values constitute their very danger and menace. Too much devotion to their possession and acquisition leads to all the dangers and vices of materialism, sensualism, tyrannical egotism and to the fortification of all the anti-social, anti-civic and anti-humanitarian instincts and ideals. Furthermore, these values are perishable and their satisfactions are

limited. They have their social and civic saturation-point beyond which progress both collective and individual is impossible. They are not real ends of life. They are means and instruments to ends. All their virtue is instrumental. They never possess intrinsic worth, universal worth, and can never be desired by rational human beings except as the scaffolding to higher social, civic and ethical levels. Without them, we cannot have refinement, art, science, literature, and the physical comforts and conveniences of life; yet the possession of them and the pursuit of them do not necessarily entail the ability to enjoy the only things that make life tolerable and capable of justification from the point of view of a rational and super-animal humanity.

WEALTH IMPOSSIBLE AS A UNIVERSAL EDUCATIONAL OBJECTIVE

I would make this lesson, and the following concrete illustration of the futility of its opposite, part of the fundamental ethical and civic instruction of every young person and the starting-point of all teaching for vocational guidance and for all ethical, civic, and social culture. Clearness about a fundamental principle is more essential than explanations of gas-rates, water-rates, or the machinery of the street-cleaning and health departments. And such a central, fundamental principle is the contention that can be proved to a mathematical certainty that wealth and material goods can never be made the sole objective of life without formally deceiving and damning to eternal disappointment the great bulk of humanity. And, further, if this doctrine can be thus demonstrated to be false, it is a social and economic lie on the part of educators to teach what most of us are now teaching. For no doctrine should be taught that cannot reasonably be made a doctrine of universal application for all normal members and citizens of any commonwealth; and any other teaching is stultifying and unethical; and such is the case with the doctrine which makes wealth and material goods the aim of life.

The figures which I shall present are from King's "Wealth and Income of the People of the United States" (Macmillan) and from my own consultation of the United States Census Reports, with corrections privately made by Dr. H. B. Gardner of Brown University, President of the American Economic Society.

The statistics taken are for 1910 for the reason that these are more accurate and more easily interpreted by our old stable standard of economic values. In that year the total produced wealth of the United States, omitting duplication in the census reports, was \$30,530,000,000.00, or \$332 per capita. Per standard family, the entire wealth produced amounted to about \$1300 per year. The average amount necessary to support the individual workingman's family in New York was \$900. This left a margin of \$400 per family, which collected constituted the entire wealth from which were to be extracted or wrested all the numerous modest and immodest incomes necessary to support leisure, refinement, art, literature, science and profiteering, and to supply the urgent aesthetic, sensual needs of the educated and the privileged classes. Furthermore, only 4% of the population before the war had incomes above \$3,000.

The inference from such figures is that by the absolute mathematical calculus of probabilities over 90% of all living human beings, even in a wealthy country like ours, are, by the very nature of our economic and industrial system, foredoomed to a modest existence. Our entire competitive commercialized theory of education is based, therefore, in its more aggressive forms, on a social and economic lie. We are teaching that lie in our schools. The rewards, the lures, the promises we hold forth to struggling youth are based on the assumption of the necessary failure, material misery, and physical disappointment of nine-tenths of our fellow-human beings. Until the production of material goods has been raised to the point where each normal and deserving individual can have an adequate amount of wealth, not even justice or Divine Providence can

bring to every one of us that proportion of the material necessities, conveniences, and devices of life which shall insure to everyone his full ethical, spiritual and intellectual development. What is needed in education for objectives today is a transvaluation of values. We must re-define success, and repeat forcibly, and never tire of reiterating, the truth that success is not the conspicuous possession of material goods, money, property or power, and that to those persons who believe such a doctrine only luck and the accidents of birth and environment or prodigious natural genius can bring the desired consummation.

Thrift, vocational education, possession of the great commercial virtues, and high ideals of citizenship, will lead to a modicum of material success within the limits of the economic barriers set by the life-history and the chance environment of each individual, but can not infallibly lead to extraordinary material rewards, *for the simple reason that these rewards do not exist in sufficient quantity to admit of distribution as prizes to all who adopt the much-vaunted virtuous, vocational life.* Unless we can find something else in existence besides conspicuous material success, life will be for the overwhelmingly great proportion of humanity a failure. No system of civic or ethical education can be based on such a fallacy or take its point of departure from a maxim which can not be made universal for all the normal members of every well-constituted common-wealth. Conspicuous wealth will always be the reward only of those who possess in conspicuous degree what may be termed the distinctively acquisitive properties, just as conspicuous musical or artistic success will be the reward only of those who possess as innate gifts high musical and artistic aptitudes.

INTRINSIC AND UNIVERSAL VALUES

There remain the other values or objectives which ethical analysis has revealed. They are respectively the values concealed in the traditional and almost forgotten terms: truth, beauty, and virtue. The economic values which we have just been considering are transient, disappear on use, are subject to corruption and decay, and are largely exclusive, incapable of being used by all, of being shared by others, and so militate against altruism, the civic and the social attitudes. On the other hand, the values connected with the notions of truth, beauty and virtue are intrinsic, are permanent, are catholic, are not exclusive, cause no denial or poverty in others, can be shared by all, and can be used and enjoyed without being consumed. They are the real ends of life, they are the values which even those most successful in the way of matter and wealth always yearn to incorporate in their persons and to realize in their life careers. They are the last things to be reached, but the only things worth reaching. They are the reasons why we are alive, and all other values, economic, material, sensual, important and fundamental as they are, are merely the instruments by which these higher and distinctively human characteristics of existence can be attained. The spatial part the intrinsic values play in life, their "area," is small compared with the part which the economic values occupy, but their importance is to be measured not by their volume but by their intrinsically essential, super-saturated human characteristics. They are but as drops in the great material ocean, but they are the quintessences of the rarest flowers that human evolution has produced and constitute the only reason why that evolution exists or should be allowed to exist.

THE SCALE OF VALUES AND THE UNIVERSAL OBJECTIVE

These intellectual, aesthetic, spiritual, civic, social, and moral values, which embrace all the higher machinery for the understanding and control of man and nature, may themselves be arranged in an order or scale of importance or universality. Not every man and woman will reach distinction in the pursuit of science or of truth, or rank conspicuously high in aesthetic achievement. These values, too, while not exclusive, are yet largely limited to those whose innate gifts fit them for either creation or appreciation. But the moral and the civic

values are within the reach of all normal persons. The task of education from the old point of view is essentially the construction of the ethical, social and the vocational personality, the equipment of each zoological individual with sufficient vocational skill and habit to enable him to make a living, and, after that, the construction within his skin of the right controls, of the right attitudes towards his fellow human-beings within all groups over all the surface of the earth, and of the right actions and reactions toward the great problems of life and nature, and of the proper capacities for extracting from experience all the treasures that experience contains. But while it is not permitted to us all to possess for ourselves even the aesthetic and the intellectual values, yet there is a field in which great intellect, great native skill, or unusual natural endowment are not required for success. This is the moral, the civic, or the social field. Moral conquests and civic capacities, the moral life and the civic life, are within the reach of all, even of the lowliest. The performance of duty and the enjoyment of rights are beyond no man's reach, and a thing which every man can reach is a fit thing to set up as the goal of universal education. Only that thing can be truthfully said to be a democratic ideal which we can safely assure to every man is within his power to reach. Wealth, even science, literature, and art may all dissolve and pass away, but after all has gone, the moral, the civic, and the social achievements which constitute the essence of every man's life, will still remain. I verily believe that in the ruin of material Russia today there are a host of unknown outstanding figures that have reached and occupy in silent glory these great altitudes of really human distinction, and that in them lie the hope and the salvation of the Russian empire to come.

I am seeking a gospel that will justify and honor the life of the common man, and that gospel will never come into being until material values are dethroned and put in their rightful, subordinate place as instruments to higher ends, until our standards of human valuation and appreciation are reconstructed, and the world's sanction and rewards are given to ethical and civic achievement as the crowning grace of life. He who has lived well in obscurity has lived the ideal life,* and has achieved success as much as he who has lived at the sunlit tops of glory and worldly fame. And this, after all, is the burden and essence of all the great religions of humanity. If you teach anything else, you teach humanity to gamble with the gods of Chance, and you may be assured that the dice of the gods are always loaded.

AIMS, PRINCIPLES, DETAILS

In your vocational guidance, in your community civics, and in all your social science, set up as your ideals, first, health, secondly, sufficient wealth to maintain an honest, efficient civic existence, and thirdly, that love of truth and beauty which is now commonly embraced in the terms science and the fine arts. But lastly, and principally, make all the factors and objectives of the curriculum center about those great ethical and civic ideals of life which put as the end of existence the construction of the perfect social and ethical personality, and from which are energized all the activities that make life possible on earth and make it worth living both for ourselves and for our fellows. The core of our curriculum, I repeat, should be instruction in modern ethics, in the science of the conduct of the new modern and social life. This will involve the study of our own personality and its relationships to our fellows. Each of us to the other is always another. The new sociology will be included. Its new concepts, when mastered, will be found more powerful than the old both for the understanding and for the control of human experience in all its forms.

The fundamental problem of civics is essentially an ethical and sociological problem. We have long since learned, and we must all teach, that the organization historically known as the state is not co-terminous with life, that our

*"Bene qui latuit, bene vixit" (Ovid).

interests and experiences involve a multitude of activities which the structure of the state does not touch and does not comprehend. For the understanding of these forgotten and forsaken fields of experience, a new science has been created, which is now just coming to its own, and the new concepts and intellectual machinery of which constitute the greatest engine for the understanding and the control of life that has yet been discovered. It is sociology, and is concerned with the study of the group, not only in its structure and organization, but in its multitudinous dynamic and functional aspects. It sets up as its educational ideal the attaining by every man of an ever-growing and ever-widening group-consciousness. In the old days, we thought of the ethical personality as growing and expanding until it absorbed increasing and ever-widening perspectives, until it incorporated more and more universal values, and finally had a mystic ending in absorption in the brotherhood of man and in communion with God. But the growth of ethics is now conceived as the growth and continued widening of the group consciousness. "The larger group consciousness" is the newer, more concrete, and more manageable concept for what the early and mediaeval Christians called love and the brotherhood of man, and which Comenius called God.

Principles are the essential thing. They are necessary for defining objectives. They are the concern of the science and the philosophy of education. But unfortunately, the practical educator and administrator has to deal with individuals and not with principles or generalizations. What the administrator wants is particulars,—particulars that will fit in with his peculiar limitations of time and space. Each individual pupil is different, and each administrator requires a different recipe for the conversion of the almost purely zoological specimens committed to his care into the perfect citizens of the Periclean type. Unquestionably, for the solution of the practical difficulties here involved, some sort of clearing-house is necessary in which the bewilderingly numerous devices and methods that have been proposed can be classified and ordered. Such clearing houses exist in the many committees now appointed by the N. E. A., by the historical and sociological, and by other educational societies. Time forbids the enumeration of these splendid contributions to the central problem of education. I give appropriate references to them in the appended note.

REFERENCES

"The School Review" (University of Chicago) for April, 1920, gives (1) the report of the Committee of the American Sociological Society on "The Teaching of Sociology in Grade and High Schools," (2) the report of C. O. Davis on "Training for Citizenship in North Central Association Secondary Schools," and (3) the report of the National Education Association Committee of Secondary School Principals on "Social Studies in the High School." "The Historical Outlook" (McKinley Publishing Company, Philadelphia) prints in its number of June, 1920, Professor Finney's report on a course in General History from the sociologist's standpoint. In the June, 1919, and February, 1920, numbers of the same magazine will be found the report of the History Committee of the American Historical Association. The current numbers of both the above-named magazines contain valuable articles on citizenship in all forms.

The files of the "American Journal of Sociology" should also be consulted for its valuable contributions to the problem of teaching citizenship. We have in it such articles as "Education for Democratic Leadership" by C. H. Grabo, May, 1918; "Americanization: Its Meaning and Functions," by C. Aronovici, May, 1920; "Education for Citizenship in a Democracy" by C. A. Ellwood, July, 1920.

The files of "Religious Education" (Chicago) also contain valuable materials for the study of citizenship from the ethical and religious points of view. (See especially the September, 1911, number.)

Books of the old type, like W. L. Sheldon's "Citizenship and the Duties of a Citizen" (W. M. Welch Company, Chicago, 1904) might be consulted. J. H. Tuft's "The Real Business of Living" (Henry Holt & Company), "Citizenship and an Introduction to Social Ethics," Milton Bennion (World Book Company, Yonkers, New York), "Syllabus of Moral and Civic Instruction for the Grade School," F. J. Gould (University of Wisconsin, Madison, Wisconsin), "Lessons in Community and National Life," published by the U. S. Bureau of Education, Department of the Interior, Washington, D. C., are some of the more recent attempts.

But the most important of all is the Report of the Secondary School Committee on Social Studies, 1916. (U. S. Bureau of Education, Department of the Interior, Bulletin No. 8.)

Newer books like F. Bobbitt's "The Curriculum" (Houghton Mifflin Company) give many valuable discussions of education for citizenship, and helpful hints may be gained from the Institute for Public Service bulletins (423 West 120th Street, New York City).

Abridged General History is again fast taking a recognized place in the curriculum of the modern school and such texts as Wolfson's "Ancient Civilization" (American Book Company), Botsford's "Brief History of the World" (Macmillan Company), and West's "Story of Modern Progress" (Allyn and Bacon) will soon be widely adopted as a device for economizing time.

5. SOCIAL EVENTS

The usual social features were observed, as the annual reception Friday afternoon, the luncheon for the Principals' Association Friday noon, served by the ladies of Trinity M. E. Church, and the dinner Friday evening by the Social Science group at the same church. Friday noon the Classics Section had luncheon together at the University Place Christian Church.

PART II

SECTION MEETINGS

1. ADMINISTRATIVE SECTION

Section met at the Auditorium, the first session being called to order at nine o'clock by President W. L. Goble.

Principal C. W. Whitten of DeKalb Township High School gave a report of the Committee which has been working with the objectives of secondary education. His paper is given below.

Dr. W. A. Evans, Health Expert of the Chicago Tribune, next gave a very interesting address on "A High School Health Program." This paper was not obtainable.

In the discussion following Dr. Evans' address, Principal E. V. Tubbs of New Trier Township High School presented the paper given below.

"Wealth as an Objective" was the title of a very interesting address given by Professor O. L. Manchester of the Normal University. His address is given farther on.

Discussing this topic Principal H. G. Schmidt of Belleville Township High School presented a paper which is also given below.

AFTERNOON SESSION

In the afternoon session Mr. Will C. Robb of the J. Sterling Morton Township High School gave a report of the work being done in that school with the part time continuation school. The paper follows.

Mr. I. M. Allen, Superintendent of the Springfield Public Schools, gave a very interesting discussion of the topic.

The latter part of the session was given over to the meeting of the Illinois High School Athletic Association.

NOON LUNCHEON

At noon the session lunched at the Trinity Methodist Church and several very delightful toasts were given by Dr. J. C. Hanna, T. J. McCormack and Dr. H. A. Hollister.

In the business session Principal Silas Echols was re-elected Vice-President for a term of three years, and Principal W. R. Spurrier was re-elected as a member of the Executive Committee for a term of three years.

Objectives as a Basis for Curriculum Reconstruction

C. W. Whitten, DeKalb

Except insofar as may be absolutely necessary to make myself intelligible I shall not review the discussions of last year. Those of you who read the printed reports of the Conference, and, of course, you all do, recall that there were two reports on High School Objectives. These two were so wholly different, on such entirely different planes both in theory and content, as scarcely to be rivals for your approval. Indeed I think I may say truthfully that they were in no sense real rivals. I am convinced that one might very frankly give full assent to both of them without doing violence to any logical principle. The four objectives reported by the chairman of the Organizing and Advisory Committee were designed to be remote, "ultimate Life-Interest" Objectives. The seven objectives taken from the "Cardinal Principles of Secondary Education" and reported by the present speaker were advocated as immediate, concrete objectives calculated to assist in selecting actual material of instruction for classroom uses. It is possible that both types of objectives may be necessary. Certainly the latter type is absolutely essential to any intelligent program of curriculum construction or revision.

However, there has been during the year that has passed since we last assembled here, no little controversial discussion over the points involved in the two reports and no agreement as to the relative merits of the two schemes has been reached. I do think that those who have been parties to the discussion have been able to agree upon certain tentative principles, however, and it is mainly to these principles that I desire to call your attention today.

Last year I devoted a considerable portion of my paper to a discussion of the necessity, or at least the desirability of curriculum revision. Now I find myself compelled again to emphasize the desirability of considerable revision in the high school curriculum. Anyone not absolutely insensible to the handicaps under which the average high school graduate has to struggle when he takes up the responsibilities of the active affairs of life in organized society must realize, not necessarily how poorly we are doing, but how much better we might do in our high school courses. I think that under the stimulation of last year's discussions I have during the present year scrutinized with somewhat more than ordinary discrimination the courses being offered in my own school. I must confess that I think they fall far short of ideal efficiency in equipping our young people for the complex and strenuous duties of society membership. We seem to be spending so much time on matters that are apparently worthless and omitting so many things that seem of real moment. I am sure I need not go into details to verify this statement. I assure you that were I given the whole time of the session I could use it up in pointing out what seem to me to be "deadwood" in our present curriculum and matters of real vital interest that we now omit. Our courses in English, mathematics, language, history and science, are far from ideal. How shall we alleviate the situation?

This question brings me to my subject, which is "Objectives as a Basis for Curriculum Reconstruction." Of course, any change we may make in the Curriculum must be in the light of the thing we desire to achieve. I am assured by students of the History of Education that much of the material of instruction in our present high school curriculum has been put there by enthusiastic specialists rather because it satisfied the scholastic sense of the specialist than because it might prove of value in developing the kind of man or woman we might wish to turn out as a product of the school. Now, I am free to assure you that one point upon which all of us who have been discussing this question are agreed is, that it is quite essential that we scrutinize every subject of study in the light of the thing we desire to accomplish. Furthermore, we are agreed that we must seek the objectives of educational procedure in real, human life-interests. I regret to have to confess that at this point the harmony ceases.

What particular life interests should predominate in determining the choice and organization of high school material of instruction is a question that we shall probably never be able to agree upon with any degree of unanimity. Certainly the four objectives reported by the Organizing and Advisory Committee last year are absolutely helpless and impotent. The very all-inclusiveness which their authors claim for them condemns them so far as any real helpfulness in determining high school studies is concerned. It is said that for any one person of average ability to complete all of the courses offered here in the University of Illinois would require some 250 years. Now I suspect that every course offered can be justified in terms of some life interest. By what criteria shall we choose the few topics that must constitute the material of instruction for the meager four years the pupils can spend in our high schools?

Moreover, I am not helped by the rules laid down by Prof. Charters as governing the technique of curriculum construction. The rules seem simple enough and wholly reasonable. But sometimes the rules that are simplest in statement are most difficult to follow. Thus after having divided all human interests up into topics of a "size" adapted to high school instruction, we are told by Prof. Charters to "arrange these in order of importance." This reminds me of the story of the savant who advertised to send, for one dollar, a guaranteed method for learning the German language in six days. An ambitious patron forwarded a dollar and in due course of time received the following most simple and efficient rule: "To learn the German language in six days divide the language into six equal parts and learn one part each day." Some of Prof. Charters' rules of technique are on about the same plane of simplicity. They express exactly what ought to be done but what nobody can do. I understand that the Organizing and Advisory Committee is proposing to continue the analysis of life interests until "units of workable size" are obtained. Then the question of arranging them in the order of importance and selecting the most important for school use remains. It seems to me that this can never be more than a mere matter of opinion. The best we can hope for is to get a sort of consensus of opinion on the subject. It is not at all probable that we ever can nor that we ever should be able to secure such entire agreement in this matter that high school courses should become identical throughout the entire country.

But it does seem to me that as a body of high school principals and school superintendents we ought to be able to agree upon a set of high school objectives that would serve adequately to guide the teacher in judging the value of a course or subject of study. Personally I believe these objectives must be very concrete and immediate. Students who delight in working out a complete "system" rather than in actually preparing material of instruction to teach to children may start as far away from the real problem as they choose. But soon or late they are bound to arrive at the stage where they must provide actual material of instruction. When that stage is reached the knowledge that "Association" is an ultimate life-interest objective will help not at all in determining whether or not I ought to present a series of lessons on the history and significance of the Church nor what material I should include in such a series of lessons if I decide it ought to be given. Nor will the knowledge that "Wealth" is an ultimate life-interest objective render me much assistance in selecting and organizing the material I wish to present on the Protective Tariff. Nor will "Health" as a remote ultimate life-interest assist me in determining whether I shall present the hygiene of sex nor how to organize and teach it if I decide it is desirable. The objectives that must guide me in determining these matters must be very much more immediate and concrete.

I candidly believe that this whole discussion of objectives is largely academic and is most wasteful of time and energy. I mean by this that I believe we are not so devoid of proper objectives that we need to spend so much time in a discussion of them. For that reason I am the more willing to make

this discussion brief. The need of concrete material of instruction is much more imminent. One of the most helpful things that came out of the war was the series of lessons on community and national interests edited by Judd and Marshall of the University of Chicago and published by the government. These are far from perfect but they attack the real problem of curriculum construction and mark some real achievement toward the solution of the problem. If there is a serious sentiment in favor of curriculum reconstruction we can do no better than to follow the example so well worked out by the government in getting this work under way. The mere recognition of "deadwood" in the curriculum and the recognition of important omissions from our present courses will not get us anywhere. The most comprehensive set of objectives will not of itself organize the material of instruction. Somebody, guided by objectives, to be sure, must get to work and get the material ready for presentation. And right there lies the real work of curriculum construction.

It is now two years since the committees on curriculum reconstruction were appointed. So far as any real modification of class room material is concerned, I can detect no progress. I presume we are really two years nearer to the actual revision of our high school courses but, if we are, it is due to those forces that control the movements of the heavenly bodies and the onward march of the seasons rather than to anything this conference or its committees have accomplished. Possibly I am too impatient for results. If so, I think I am in a fair way of being schooled in patience in the present situation. In the meantime, where shall we turn for help in actually modifying the present courses of study to the end that our high schools may immediately begin to render service to our communities commensurate with the treasure and thought and actual love which the communities are putting into them?

Health Program of the New Trier Township High School **Eston V. Tubbs, Principal**

Since my time allotment is very limited, I can give you only a brief, matter-of-fact, outline of the health program of the New Trier Township High School.

The persons through whom our health program is administered are:

1. Practising physicians.
 - a. Three men doctors for the boys.
 - b. Two women doctors for the girls.
2. Physical training department consisting of:
 - a. Three men.
 - b. Three women.
3. The school nurse also plays a most important part.

All students are examined at the beginning of the school year by physicians, assisted by the school nurse and the physical training instructors. The fee paid the examining physicians is 75c per pupil. The members of our faculty are urged to avail themselves of the services of the medical inspectors for the reason that it is just as important that their physical resources should be conserved and protected to the same extent that the physical welfare of the students is safeguarded. Innumerable instances could be cited where both the school and individuals have profited immeasurably as a result of the physical examinations conducted by our school physicians.

I can best give you an idea of the reach and thoroughness of our examinations by reading the various items which appear on the physical examination record for girls. The boys' card differs only slightly from that used for the girls. (See sample forms here given.)

PHYSICAL EXAMINATION RECORD
 Last Name First Name Initial Address
 NEW TRIER TOWNSHIP HIGH SCHOOL, KENILWORTH, ILL.

HISTORY

Date of Birth	Mumps
Birthplace	Measles
Nationality of Father	Chicken Pox
Nationality of Mother	Pertussis
.....	Diphtheria
No. of Children	Scarlet Fever
in Family	Vaccinated

"O" IN SQUARE DENOTES ABSENCE "X" PRESENCE OF DEFECTS

Date .....	.....	.....	.....	.....	.....	.....	.....
Age .....	.....	.....	.....	.....	.....	.....	.....
Vision—( ) .....	.....	.....	.....	.....	.....	.....	.....
Vision—(L) .....	.....	.....	.....	.....	.....	.....	.....
Hearing—(R) .....	.....	.....	.....	.....	.....	.....	.....
Hearing—(L) .....	.....	.....	.....	.....	.....	.....	.....
Nose .....	.....	.....	.....	.....	.....	.....	.....
Tonsils .....	.....	.....	.....	.....	.....	.....	.....
Adenoids .....	.....	.....	.....	.....	.....	.....	.....
Teeth .....	.....	.....	.....	.....	.....	.....	.....
Anaemia .....	.....	.....	.....	.....	.....	.....	.....
Goitre .....	.....	.....	.....	.....	.....	.....	.....
Heart .....	.....	.....	.....	.....	.....	.....	.....
Pulse Rate—Standing .....	.....	.....	.....	.....	.....	.....	.....
Pulse Rate—After Exercising .....	.....	.....	.....	.....	.....	.....	.....
Pulse Rate—Reclining .....	.....	.....	.....	.....	.....	.....	.....
Lungs
Nervous System
Glands
Skin
Spine
Knees
Feet
Development

Remarks

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The following is a report of the physical examinations of New Trier girls, submitted Oct. 12, 1920.

Total number examined	427
Anaemia	17
Goitre	56
Fast hearts	78
17 of which have to be watched and exercise restricted;	
13 students excused from all forms of physical exercise.	
Needing special work to correct spinal curvature tendencies	18
Needing special posture work	28
Flat feet	53
Scabies	1
Teeth needing attention	13
Bad tonsils	63
Eyes needing attention	27
Total number of defects	354

Report of physical examination of New Trier boys, Oct. 6, 1920.

Total number examined	458
Number wearing glasses	44
Eyes needing attention	1
Heart lesions	14
Heart fast or irregular	12
Slight curvature of spine	20
Adenoids	21
Enlarged tonsils	61
Teeth needing attention	30
No recent vaccination	168
Feet flat or slightly flat	94
Broken arches	3
Defective hearing	7
Anaemia	5
Malnutrition	7
Varicocele	15
Hernia	5
Hydrocele	3
Goitre	3
Ears needing treatment	1
Enlarged thyroid	3
Unsatisfactory condition of lungs.....	1
Flat chest	4
Poor development	4
Defective nose	1
Blind in one eye	1
Malformed hip	1
Crippled leg	1
Enlarged inguinal and axillary glands	3
Dilated heart	1
Infections—foot	1
Coated tongue	1
Total number of defects	536

To some the above figures might seem to reveal a very bad health record. The implications are bad enough at the best. It is our humble opinion, however,

that if medical inspections were conducted as thoroughly in other high schools as they are at New Trier the results would be astounding if not shocking.

Reports are sent to parents when defects are noted on the card by the examining physician. A letter written by the principal to the parents accompanies the reports. The parents are urged to take immediate steps to correct all defects noted upon physical examination record card and thus remove every obstacle to the student's progress.

The follow-up work by your school nurse is one of the cardinal features in the supervision of the health of the students of New Trier. She assists and cooperates in every way possible during the illness of pupils. She also advises with parents regarding the health habits of students in order that sickness might be avoided and the school work of the student improved. Frequent inspections are made of school toilets and careful attention is paid to the ventilation in the various class rooms. In order to give you a clearer idea as to the nature of the school nurse I shall read you the items appearing in her weekly report. (See below.)

NEW TRIER TOWNSHIP HIGH SCHOOL
Kenilworth, Illinois
Nurse's Report

Weed Ending November 5, 1920.

Date	School Visits	Home Calls	Taken to Dr.	Inspections	Scarlet Fever	V Measles	Chicken Pox	V Mumps	Influenza	Others	Skin Diseases	Scabies	Burns	Boils	Sore Throat	Eyes	Wounds	Miscellaneous	Defect. Vision	Teeth	Excluded	Temperature	Rest Room	No. Phy. Assisted	TOTALS
Monday...	1	...	...	10	...	...	...	...	...	...	...	...	...	...	...	2	2	4	...	...	...	...	3	...	22
Tuesday ..	1	...	...	4	...	...	...	...	...	...	...	...	...	...	...	3	2	3	...	...	...	...	4	...	17
Wednesday 1	1	...	...	6	...	...	...	...	...	...	...	...	...	1	...	...	3	5	...	2	...	...	4	...	23
Thursday .	1	...	...	5	...	...	...	...	...	...	...	...	...	1	...	...	2	6	...	...	...	...	4	...	19
Friday....	1	...	...	4	...	...	...	...	...	...	...	...	...	1	...	...	1	5	...	...	...	...	5	...	17
TOTALS:																								98	

School Nurse, Lena W. Frew, R. N.

To students who are below normal or who are physically defective special corrective exercises are given in a clinic room which is equipped with apparatus best adapted to the correction of malformations. The following is a report of special work given girls for posture, spines, corrections made of defects for the year 1919-1920:

Cases of round shoulders	61
Reported O. K. all but 8, who will continue work this year.	
Crooked spines	34
O. K. all but 5.	
Girls given special resistive exercises for fast hearts.....	7
All O. K. but 1. This student is now able to take swimming.	
Cases of flat feet	84
Three-fourths have recovered.	
Pairs of defective eyes	25
All corrected by glasses.	
Infected and enlarged tonsils now corrected.....	30
Pupils whose teeth have had attention	5

Total number of defects corrected..... 245

Defects corrected among boys since last medical examination:

Enlarged tonsils	9
Heart murmur	2
Irregular heart	3
Curvature	11
Teeth	2
Vaccination	2
Flat feet	3
Hernia	1
Malnutrition	2
Eyes	3

Total number of defects corrected..... 38

Our chief reliance, however, is not in our medical examinations, the follow-up work of our school nurse, or the special corrective exercises in our clinic room. Our health program is rooted in the time-honored adage, "An ounce of prevention is worth a pound of cure."

Physical training is required of all students (unless excused for cause) during their attendance at New Trier. The aim is to teach each pupil simple exercises on all the various pieces of apparatus to be found in a modern gymnasium. He is also coached in all the most popular American games. An attempt is made to find out that branch of sport to which the student is best adapted, and to interest him particularly in various vitality building forms of activities which he can continue after his school days are over.

Our physical training group of buildings contains two large, completely equipped gymnasiums, one for the girls and one for the boys. Between the two gymnasiums is located the natatorium. The natatorium is of regulation size, and is lined with white enameled brick. It is equipped with a filtration system which insures a pure water supply. At frequent intervals the water is tested by one of our science teachers in order to avoid all danger of infection. Most of the time the water in the tank is as free from bacteria as is our drinking water. Swimming is a part of the regular physical training course, and every student in the school is required to learn how to swim.

A six-acre athletic field is located on our campus. It includes football and soccer fields, a track, a baseball field and two practice diamonds, a small

athletic field for girls and four regulation stone dust tennis courts. Just at present we are taking steps to acquire seventeen acres of additional land so we can enlarge upon our present program of giving adequate attention to the health activities of our students.

Every student at New Trier is given an opportunity to participate in the various sports. When the weather permits, the gymnasium classes are conducted out of doors. Intra-mural tournaments are carried on continually throughout the school year.

Report on girls' intra-mural and inter-class athletics (after school activities only) during season of 1919-1920:

Elimination tournament in volley ball, 22 teams, 9 each....	198
Hockey teams playing during period of six weeks, twice a week	47
Basket-ball—48 girls playing each once a week for 7 weeks..	48
Baseball—4 teams playing twice a week for 6 weeks.....	40
Swimming—4 teams competing once a week for 7 weeks..	29
Tennis tournament	40

Total number of girls participating 402

The above report includes only scheduled games, and not the preliminary practices during which many more were called, but not chosen. Time does not admit of a statement of the intra-mural activities of the boys.

Last winter a skating rink was constructed by flooding our front lawn. This afforded our students an opportunity to participate in one of our most popular out-of-door sports. There was very little illness among our students last winter, and our school physician stated that in his opinion our skating rink was very largely responsible for the healthful conditions that obtained in our school.

The health program which is being followed in the New Trier Township High School, while rather expensive, is valued by our people at many times more than what it costs.

Wealth as an Objective

O. L. Manchester, Normal University

Mr. Manchester spoke without manuscript, but the following points were made.

1. Wealth is not an ultimate objective at all. We wish wealth—whether money or goods—in order that we may attain the satisfaction of our wants for health, sociability, the true, the beautiful, and the good.

2. This whole scheme of objectives might better be as follows:

Social Happiness, Health, Wealth, Sociability, The True, The Beautiful, The Good.

3. It is not best to leave out The Good as an ultimate aim. We have an instinct or predisposition that demands justice in social relations. This is not to be confused with our instinct for sociability. My desire to be with people is entirely apart from my instinct that leads me to wish justice in the relations of people.

4. It is not best to degrade The True by making it simply a means to the attainment of health, wealth, beauty, and sociability. We wish knowledge for its own sake. Here again is a fundamental instinct—the instinct of curiosity—and an instinct that has been the origin of most scientific progress.

The makers of the scheme we are considering today seem to have subordinated The True for fear if it were made a fundamental want then any kind of knowledge might legitimately claim attention and time in the curriculum. But this is perverting science to suit our purposes. And there is no necessity for such a perversion for it is recognized that these six mutually re-enforce each other. The True that is most worthy as an aim will presumably—not necessarily, however—be that particular truth that leads to our attainment of health, beauty, etc. I say *not necessarily*, for I shall want to know the truths of astronomy and mathematics whether they contribute to my health, my social relations, etc., or not.

5. But we shall all agree that wealth is an objective, whether ultimate or secondary. What, then, is the bearing of this fact upon the making of a curriculum?

6. We have a science that defines itself as The Science of Wealth, and that science is economics. It attempts to cover the whole subject in a scientific way—that is, with due respect to rule and principle and law. It discusses production, the function of land, of labor, of capital, of management. It seeks to discover the laws of value or to discover why one good exchanges for just so much of another, for unless there be equity in exchange somebody will not get what he produces. It formulates the laws of rent, interest, wages, profit. Economics shows that progress in production depends upon saving, conservation, and investment, and decries extravagant or luxurious expenditure as calculated to mis-direct and relatively waste the application of labor and capital power in production. It would seem that economics as the subject has been developed in the best textbooks is just what the need of the curriculum in this particular demands. Yet economics is taught in only a minority of the high schools.

7. The important side of economics today is not production but distribution. We are already producing enough wealth to keep in comfort half a dozen worlds. But the trouble lies in distribution.

For every man who has a million dollars there are 499 who have nothing. The problem of production was one of natural science. We solved the secrets of nature and applied nature's forces in production. This has led to wonderful accomplishments. We are never tired of recounting how in our watch works a man makes a watch in a day; how in the stock-yards we save all the hog but the squeal; how the great newspaper press prints sheets enough in an hour to reach from Champaign to Chicago; how upon our railroads a ton is carried a mile at an average cost of three-fourths of one cent. All of this is very grand. But it reminds me of the story of Frankenstein. Have we, too, created a monster without a soul? Have we got this industrial system or has it got us?

8. The demand is then for social science. For no other branch of social science quite so clearly as for economics, the science of wealth. We have reached a place in our industrial and social development where the further discovery of the secrets of nature and the application of the forces of nature in the production of wealth, may mean, unless accompanied by a better understanding of the principles of distribution, a more unsocial society, a more undemocratic democracy, a more irreligious religion, and in all be not a blessing but a curse.

9. What a travesty it will be upon modern pedagogy, if, in this day of apperception, in a society founded upon free competition, economic freedom, private property, our school system continues to provide for no sufficient analysis of these concepts! Similarly, as to the laws of distribution, of value, the principles of money, of taxation, etc.

10. During the past few months we have heard much talk of reconstruction. Now no woman would start in to reconstruct a last year's gown without studying first the garment's construction. If I tried to reconstruct my Ford, not understanding its construction, my effort would very likely end in its destruction. But millions of good people upon this and the other side

of the Atlantic are today glibly talking about social reconstruction, without understanding the A, B, C of social and industrial reconstruction.

11. But are not these principles of construction of industrial society beyond the powers of high school boys and girls?

We think they are not. We think our high school senior can see that if I make a lawn mower to cut my lawn with, I am entitled to the additional fall of grass secured therewith; or if I chose to loan my mower, to something for its use. If he does see that, he sees the reason for interest and is prepared to defend the institution of private property and of capital. So, by illustration, he can be made to see the defence for private property in land and for rent; for the share of the product that we call profit; and the principles that determine wages.

12. It is only when our people understand the principles of industrial society, and, understanding them, are ready to defend them—from belief in them—that we are safe. At present, with the lack of such understanding, we are not safe. Let something get started in Europe and there is no telling what might happen here. It is only a broad running jump across the Atlantic now-a-days. Here lies the school-teachers' burden.

An Analysis of Wealth as an Objective in Education

Henry Galen Schmidt, Belleville

Never before in the history of education in this country have educators, and never has the public in general concerned itself so much with the ends, aims, and objectives in education as in the last ten years. Never has the question been so frequently asked in an educational sense, "Whither go ye?" Never has education been viewed so closely with regard to its outcomes as at this time.

For some years the now all-pervading and predominating spirit of efficiency has swept the land. It originated in industry, it culminated in the schools. What are the outcomes and what are the results were questions on the tongues of students and patrons alike. The Great War accentuated and crystalized the ideas of efficiency, and service. What are the returns to the individual, the community and the nation for all the money invested in the public high school? This idea lead to a critical study of its products, conditions, and objectives.

Thus the National Education Association through its Commission on the Reorganization of Secondary Education presented a report in 1918 entitled *Cardinal Principles of Secondary Education*, Bulletin No. 35, Bureau of Education, in which it set forth certain objectives—health, command of fundamental processes, worthy home-membership, vocation, civic education, worthy use of leisure, ethical character. In harmony with the spirit of this report, the High School Conference a few years ago set the machinery going for a thorough-going study of high school objectives. After some considerable study, wealth was made one of the major objectives.

This paper attempts in a feeble and general way to analyze the wealth objective in our scheme of education.

DEFINITION OF WEALTH

Wealth, as defined in the report of the Advisory Committee, is the command of economic goods, the means to a living, and an economic satisfaction resting ultimately upon service. Wealth as an educational objective deals primarily with vocations, the means of securing economic goods, with industry or production—the opportunity for vocations, and economy—the wise distribution of wealth.

JUSTIFICATION OF WEALTH AS AN EDUCATIONAL OBJECTIVE

In the terms of the definition just given, it may be asked, is wealth a justifiable or an essential objective in any scheme of high school education. In answer to this question hear an extract from the commission of the N. E. A. above quoted. As to vocations it says: "This ideal demands that the pupil explore his own capacities and aptitudes, and make a survey of the world's work, to the end that he may select his vocation wisely. Vocational education should equip the individual to secure livelihood for himself and those dependent on him, to serve society well through his vocation, to maintain the right relationship toward his fellow workers and society, and, as far as possible, to find in that vocation his own best development. Vocational education should aim to develop an appreciation of the significance of the vocation to the community, and a clear conception of right relations between the members of the chosen vocation, between different vocational groups, between employers and employees and between producer and consumer. These aspects of vocational education, heretofore neglected, demand emphatic attention." Ex-Pres. Eliot says: "It is high time that our teachers and leaders of the people understood that every civilized human being gets the larger part of his life training in the occupation through which he earns his living, and that his schooling in youth should invariably be directed to prepare him in the best way for the best permanent occupation for which he is capable. In other words, the motive of the life-career should be brought into play as early and fully as possible."

In the Reconstruction Program of the American Federation of Labor, appears the following: "It is important that the industrial education which is being fostered and developed should have for its purpose not only training for efficiency in industry, but training for life in an industrial society. A full understanding must be had of those principles and activities that are foundations of all productive efforts. Children should not only become familiar with tools and materials, but they should also receive a thorough knowledge of the principles of human control, of force and matter underlying our industrial relations and sciences." Mr. Vanderlip, a great business man, says that the time is past when a boy can start at the bottom of a large industry and work his way to the top. A boy now must have vocational training and a large perspective of the business he enters in order to attain prominence in it. Business has grown too complex and life is too short to attain success without special training for life's duties. Let us educate to get into work and not out of work. So much in answer to the question: "Is wealth an essential objective in education?" We shall consider the following topics: (1) Vocational Guidance, (2) Vocational Training, (3) General Economy of Resources, (4) Thrift.

WEALTH AS RELATED TO CHOICE OF OCCUPATION

As far as wealth and the individual is concerned, we must observe that the right choice of a vocation is of paramount importance. The necessity for vocational guidance comes primarily from the complexity of modern industry. Dip wherever one will into the world of modern industry—into trade, manufacturing, even into agriculture—he finds everywhere a vast and complicated network of inter-relations. Each worker is contributing some special detailed element to the final result. To a surprisingly small extent can anyone of the world's toilers change place with any other. If each new worker, as he comes to his life task, does not take up the particular labor for which he is best fitted by nature and for which he has been best trained, then by so much is the work of society less perfectly done and by so much is the individual himself robbed of some portion of his life happiness. His efficiency and his welfare depend on his finding himself, early in life. With each yearly addition to the complexity of our industrial structure, the chance of his doing this unguided becomes less.

As industry has become more complex and more specialized, intelligent guidance through its mazes has by no means kept pace. As a result, in almost any city of size we find a veritable army of misfits; while even in store and shop, among people actually employed, the perfect adjustment of worker and work tends to become increasingly difficult. It is not the purpose of vocational guidance to decide for young people in advance what occupation they should follow, nor to project them into life's work at the earliest possible moment, nor to classify them permanently by any system of analysis, either psychological, physiological, social, or economic.

Vocational guidance should be a continuous process designed to help the individual to choose, to plan his preparation for, to enter upon, and to make progress in an occupation. It calls for a progressive improvement of the public school system and a fuller and more intelligent utilization of its richly diversified offerings. It requires a more accurate adjustment between the school and all worthy vocations. Vocational guidance, properly conceived, organizes school work so that the pupil may be helped to discover his own capacities, aptitudes, and interests, may learn about the character and conditions of occupational life, and may himself arrive at an intelligent vocational decision.

Vocational guidance should help in bringing about a cooperative solution of the problems of economic and social life, and should help the largest possible number of individuals.

Realizing the importance of vocational guidance, communities are organizing to aid, and a recent report of the Committee on Community Organization for vocational guidance work under the new National Vocational Guidance Association of the U. S. says in part: "It is found that the movement (1) increases the percentage of children who remain in school after the compulsory attendance age, (2) increases the number entering specialized vocational schools and courses, (3) makes possible the classification of children for instruction according to their innate abilities, (4) stimulates the development of additional needed courses within the curriculum, (5) decreases the number of children entering and remaining in jobs which offer no incentive to advancement, (6) and conversely increases the number who find opportunity for such advancement, (7) increases demand for vocational information by teachers, students, and parents, (8) stimulates the interest of the entire community in the solution of the problem.

Our conception of education is changing—has changed, in fact. Now we realize that the home, the shop, and the farm are educational centers and that education is not solely an affair of the school, an enterprise conducted by the school master, a process acquiring information from books. We no longer regard the teacher as a school master versed in books alone.

WEALTH AS RELATED TO SPECIFIC TRAINING FOR AN EFFICIENT WORKER

Proficiency in the various vocations of life has come to be included in the aims of our educative processes.

This modification of our ideas has been necessitated largely by the changing industrial, social and economic conditions. Formerly all necessary instruction was given by the father to the son and by the mother to the daughter. The production of raw materials was governed largely by the immediate needs of the family. Cash crops as such were butter and eggs, and were exchanged for such necessary commodities as might not be produced on the home farm. The soil was virgin and there was plenty of it. There was an ample supply of fuel and lumber. Production was largely a problem of getting the necessities of life directly from the soil.

As our population has increased and our needs have multiplied, it has become necessary to produce and manufacture in larger quantities. Factories have been built, and manufacturing processes have become highly specialized

and differentiated. The home has ceased to be a manufacturing center and the children have ceased to receive instruction in the manufacturing processes. The cultivated area of the country has been extended to include various soils and climate conditions. Production has become specialized. Cash crops have been increased to provide the income necessary for the purpose of what is not produced at home. The soil has become impoverished from long mismanagement, but increased knowledge of science has resulted in new and improved methods of cultivation. New diseases and insect pests make it increasingly difficult to grow animals and crops successfully. Production has become a problem of supplying raw materials to the world's markets. The knowledge necessary for successful and profitable production has increased to such an extent that it is no longer possible for the home to furnish all the instruction.

Accompanying this evolution of industry has been a constant demand for a change in the schools, which would result in connecting the instruction more closely with life's activities. The response to this demand is expressed in various forms of so-called practical education. Manual training, agriculture, domestic science, trade training are gradually taking places in the school curriculum. Ultra-conservatives, reared in the old disciplinary purpose schools, contest these changes at every step. Taxpayers who regard education as an expense rather than an investment in democratic security oppose any extension of public education. In face of these objections, however, the schools are slowly extending their activities and modifying their curricula in an endeavor to meet the increasing responsibilities which they are compelled to assume. So the school must provide for every boy and girl educational opportunities which no longer exist in the home or the industries connected with the home, and it must provide for those individuals who have chosen a vocation specific instruction for that vocation. The schools have provided for general but they must now provide for vocational education also.

All the agencies which society has in the past organized to carry out its purposes have contributed to the education of the child, the home, the church, the community life. The school has been the main factor in education, but not the sole factor, and deserves neither full credit for the success of democracy nor full blame for its failures. In simpler days schooling was and well could be a relatively simple matter; children commonly had a wide range of contacts with their environments not accessible to-day in crowded cities and flat dwellings. Most homes were to a far greater degree than at present units of production of food, clothing, and the ordinary necessities of life; in all these operations children commonly had a part. They worked with their elders; they attended the same church, the same social functions, had the same amusement opportunities; long before they could vote they went to town and political meetings; they read the same books and papers and had their contents discussed. All these things contributed to their education.

For these simpler conditions we have substituted city life, set up a vast machinery for doing municipal and industrial work that existed only in elementary form a few years ago. We now live in an age of rapid transportation, wireless telegraph, motion pictures, automobiles, aeroplanes, telephones, great department stores, immense factories, and hundreds of other devices that we take as a matter of course, but which are the production of a single generation; a highly complex environment, but one our youth must learn to interpret, react upon, and use to the end of becoming a useful citizen and a contributor to the civilization of his generation.

As the other social institutions decrease the opportunity of our youth for individual experience, the school must increase their opportunities for such experiences. Hence the valid claim for the extension of instruction whatever its form that is related to the life of the boy and girl and to the life of society as a part of the school curriculum. These things are necessary and apply to all pupils regardless of what their future is to be.

Statistics show that 85% of all boys and girls in the United States have completed their schooling at the age of eighteen. Most of them are at work earning a living in occupations for which they have had no special training in school or elsewhere. Fifty per cent of them left school before reaching the age of sixteen.

Vocational education must come to the rescue and provide for those who are already at work and opportunity to continue their schooling along the lines of their chosen vocation or make their transition to another possible if need be; and, on the other hand it must provide for those who have not gone to work, but have selected their vocation, an opportunity to prepare thoroughly and well for advantageous entrance upon that vocation. Vocational education is, therefore, any form of education whether given in a school or elsewhere, the purpose of which is to fit an individual to pursue effectively a recognized profitable employment, calling, occupation, trade, business, or profession.

Vocational education in the field of the professions is well established, generally understood, and accepted as a necessary part of our educational system; but vocational education for the trades, industrial occupations requiring less education than graduation from college is an innovation in the school world. Its purpose is not to divert pupils from a general education, but to supplement their general education by courses of instruction which will make them more competent in their chosen callings. It has specific aims and its results are measured by the vocations themselves.

There was a time, not so very long ago, when vocational training for the profession of teaching was considered unnecessary, when all that was necessary for entrance to the vocation was a knowledge of the subject matter to be taught. Methods of teaching, organization of subject matter, and child study were picked up through experience. Fortunately that day has passed. In many vocations, however, it is still left to the worker on the job to "pick up" all his vocational knowledge by lone-experience process. Take the apprenticeship system in general; it is said that all a boy learns the first year of content matter and skill could be taught in a well organized school in less than half the time. Vocational education aims to organize the instructional content of these vocations and offer to the worker opportunity for preparation for his vocation in an effective and thorough manner.

No man or woman is educated until he or she is able to earn a living. Society demands that each individual in normal physical condition shall render it a service for which it rewards the individual in turn by at least food, clothing, and shelter. With additional service to society additional rewards are forthcoming. Vocational education consists in preparing one's self for this service.

Men and women, boys and girls, need first of all to be helped to make the right choice of a vocation. Then they should be helped to make a thorough-going preparation for their life-career, for a fortunate choice of one's work means more than efficiency, more than financial success; it means an unending source of happiness. Thorough training and a desire to grow in one's vocation rounds out life. People who do not find their highest self-expression in their work, never know one of the most wholesome and enduring joys of human life.

INDUSTRY

Under the wealth objective we cannot fail to take notice of another factor of economic well being, namely, industry—personal industry. The main characteristic of industry is a love of work. It is one of the most powerful stimulants to human accomplishments. It urges to useful activity and causes dissatisfaction by periods of protracted and undirected effort. It causes one to find, and energetically to carry on, some kind of utilitarian work to persevere in the effort to gain one's purposes. It is the habit of earnest, steady application to vocation.

Industrious people often need wise guidance in order to avoid waste. They waste advantage and energy because of a lack of reasonable direction of effort.

While no vocation nor efficiency in a vocation grows out of industry alone, yet it is the energy, backbone of very many vocations and is one of the dynamic powers that tends to success in any and all vocations. Often it is the determining factor whether a man gets to the top or stays at the bottom of his calling.

A man who lacks industry, if he be normal and well, is vocationally unsound; he is not good timber for a live, constructive business or calling; sooner or later he will be "let out" if he is employed by someone else, and, if he is running his own business, sooner or later, usually sooner, he will be "closed out."

Even though no vocational progress were made by personal industry, one would still be the gainer. Personal effort in itself is wholesome; it tends directly to health and to sanity. People who have industry as one of their leading characteristics have better health and are more normal in all ways, as a class, than are the unoccupied. Being too busy to be sick has saved many a person from a sanitarium.

Anyone, however, inclined to self-pampering, indolence, can, if he will, cultivate a fair amount of this success-characteristic. The late Prof. William James never gave better psychological advice than when he said: "Keep the faculty of effort alive by giving it a little gratuitous exercise daily."

There is some portion of every man's day which he can call his own time. This is the time not owned by an employer or directly required in profession or business, not claimed by nature for sleep or recreation. This portion of a man's life varies greatly in amount in the different vocations; it is his overtime, it is his margin of life.

How a man uses these hours spent away from his business, perhaps more than how he uses those spent at business, determines not only his ultimate advancement and success but also the grade of the man himself. It is well-directed industry that leads an aspiring and ambitious person to use his margin of life so that he is constantly becoming better informed, more capable and more cultured. The successful men of the world are those who keep preparing for success. Those men are generally too late who delay preparation until opportunity for advancement confronts them.

Overtime industry keeps one a student—a learner—all of life and prevents one from going to seed.

Well directed personal industry is an essential to economic prosperity—to wealth. Boys and girls should learn and learn well what Harriet Beecher Stowe called the best genius, the genius of hard work, and that the best fun of all is work.

THRIFT

Besides a well chosen vocation, thorough preparation for the life-career, and a desire to give a full day's work for a full day's pay, there are other considerations of great importance in the study of wealth and they are economy and thrift.

The characteristics of economy, applied to all phases of industrial and business enterprises, has greatly risen in the market of human capabilities in America during the past few years, and it is still going up. Until quite recently the business of this country, generally speaking, was conducted in an unorganized and wasteful fashion, rather than in a specialized and economical manner.

But we, as a nation, are now learning—industrially, at least—the economic lessons that some of the countries in more experienced Europe have been prac-

ting for years in the conduct of their business, and in the protection of their producing units.

The great demand in all vocations for efficiency has its basis in economy, in the desire to get better work and more work for less ultimate outlay even though higher salaries and wages are paid the efficient man than those paid his less capable brother.

Notwithstanding the fact that 70% of the people of the United States would face starvation in a period of ten days if all salaries, wages and unsecured credits were cut off, economy as a desirable personal characteristic has yet to win rational consideration with many people. It is often regarded as a social disqualification, as an indication of a mean, selfish nature; especially it is held in light regard by youth. Many a young person spends money that he knows his circumstances do not warrant, not because of love of display nor for self-indulgence, but simply because he dislikes meanness of spirit and fears that he may appear stingy. His viewpoint is wrong. He must learn to distinguish "What's What" in his personal rating and the satisfaction of living within his income and "then some."

A virtue carried to an extreme may become a personal weakness if not a vice. Parsimony is the ugly extreme of economy. There is, however, no real relationship between the two because they have their origin in entirely different motives. Parsimony springs from selfish fear, while the natural origin of economy is national judgment. Economy is not a matter of how much one spends, but how wisely one spends both of time and goods; that is, it is good judgment and utility in expenditures, be they big or little.

We have become excessively weary of thrift preachments, because of the fact that the millionaire delights to tell of the \$500 fur coat worn by the mill worker's wife, and the mill worker's wife comes back with a hectic description of the \$250,000 necklace sported by the mushroom millionaire's helpmate as she does her alleged morning's work. Everyone is bursting with news of someone else's extravagance. Everyone is deeply grieved because someone else is not thrifty. And so the subject because of the senseless moralizing to which it has been subjected, has become in the minds of most of us stale and unprofitable. Mark Twain once said that a great deal had been said about the weather, but very little had been done about it, and the same is true of thrift and thrift training, one of the great fundamentals of worthier economic well being.

The fact remains, however, that the future industrial, commercial, and social strength of America lies in the development of habits of thrift, in habits of sane conservation and generally in the dissemination of financial knowledge, in the creation of humanized capital. It is these things that the schools of America can undertake to teach and, in the process, vivify many a subject which before appeared bonedry to the practical eyes of youth.

Economists agree that the universal adoption of habits of saving will strengthen our nation tremendously. That these habits are not instinctive in American youth is demonstrated by the fact that in a certain middle western city of moderate size, the money paid out by pupils during the school year for movies and other amusements, for candies and sweets, exceeded the total salaries paid to the teachers in that community by \$4,000. Dr. Harry Pratt Judson says: "Every mentally and physically mature person can earn a living, but the essence of individual efficiency is the elimination of waste."

The educational value of the work of the Treasury Department of the United States through its thrift stamps was recognized by the National Education Association in the Salt Lake City convention last summer at which time seven state superintendents were appointed to confer with the Savings Division officials in Washington to the end that the teaching of thrift and the practice of saving and sound investments be definitely established and permanently con-

tained in the American school system. Thrift practice develops the economic saving sense as gymnastic develops the muscles.

A larger knowledge of economic and industrial interrelations is necessary to the worker, whatever be his vocation, in order that he may place himself aright in his dependence and services to his fellow man and society at large. This better knowledge leads to safer judgment in his vocational actions both as employer or as employee. It ties him closer to a realization that he owes a duty as well as that he may enjoy a privilege. It teaches him to give fairly, that he may receive justly; it helps him to understand that there are rights he may demand and obligations he should perform. A better general knowledge of industry in general, here and abroad can not depreciate any notion of economic well being, and certainly adds a cultural tone that now is lacking.

An efficient worker, whatever be his vocation, can be, should be a happy worker; a thrifty hearth a good home; happy workers—a strong nation.

2. AGRICULTURAL SECTION

THE MORNING SESSION

The Agricultural Section of the Conference was called to order by the chairman, H. F. Crosby, of Paris, at 9:00 o'clock a. m., Friday, November 19, in Morrow Hall. After announcements, reading of the minutes and the opening remarks by the chairman, the following program was given:

Report of the meeting of the A. A. A. A. T., by Professor A. W. Nolan, University of Illinois.

The Vocational Point of View, by W. H. Bender, State Director of Vocational Education, Des Moines, Iowa.

THE AFTERNOON SESSION

Paper: The Class Project, E. B. Henderson, Bridgeport. Discussion led by Gilbert Willey, Gurnee, and R. E. Augustus, Blue Mound.

Paper: The Use of the Ninety-Minute Period, A. C. Brookly, Harvey. Discussion led by W. L. Payne, Harvard, and J. H. Loomis, Roodhouse.

Paper: Supervised Farm Practice, W. G. Wagoner, Bellflower. Discussion led by W. A. Newlin, Casey, and Clare Brown, of Lincoln.

Mr. Carl Colvin and Mr. Gilbert Willey, Gurnee, were elected members of the executive committee. The following members constitute the Executive Committee for the coming year: Gilbert Willey, Gurnee, 1923, Chairman; H. F. Crosby, Paris, 1922; T. W. Clarida, Centralia, 1921; Carl Colvin, Springfield, 1923; D. L. Reid, University, Secretary, 1922.

The papers read before the section are herewith given.

R. L. REID, *Secretary*.

The Report of the American Association for the Advancement of Agricultural Teaching

A. W. Nolan, University

The meeting of the A. A. A. A. T. was held this year at Springfield, Mass., on October 19, as usual in connection with the meeting of the Land Grant Colleges of the United States. There were two sessions of the Association at which State Supervisors of Agricultural Education and Professors of Agricultural Education in the colleges participate. The whole purpose of the organization is to promote the teaching of Agriculture, especially in secondary schools.

The first paper in the meeting was presented by the writer, on the topic, "The Problem of Summer Teaching in Connection with Project Supervision." Preparatory to this paper I sent a questionnaire to the forty-eight State Supervisors of Agricultural Education, asking the following questions:

1. Do you have any required systematic study from books for your vocational students under the supervision of the Smith-Hughes men during the summer? If so, of what nature?
2. Do you have any manual or guiding directions for practice and reading during the summer in connection with the home projects?
3. What is the nature of the instruction which should be given by the teacher during the summer to the students carrying on farm projects?

To the first of these questions, thirty-five supervisors replied that they did not require any systematic study from books for vocational students during the summer. To the second question, thirty-three replied that they did not use any manual or guiding directions for practice and reading during the summer. Our own bulletin, No. 10 in Illinois, and the similar one in Oregon were the only reported guides of this nature used in the country. Most of the supervisors reported that project outlines and record books furnished the only guide for summer work of a book nature. To the third question, many interesting replies were given. The thought of our leaders in agricultural education and the best practice of the vocational teachers of the country, so far as I have been able to determine, with reference to summer teaching of agriculture, seem to be based upon the principle, that *summer instruction* in connection with project supervision should be given to the pupils largely in *personal conference* with the boy at the *scene of his work*. This conference should be held with a view of determining the problems which the pupil is facing in the natural development of his project. The teacher should guide the pupil to the solution of those problems, to the processes and important skills and to the leading facts and principles underlying the best practices, such as matter learned from books, bulletins, and the teacher's own suggestions. In brief, the function of the teacher during the summer in this connection will be to stimulate the pupil to recognize his problems and to guide him in their intelligent solution.

In addition to this informal instruction, certain formal requirements should be made as a basis in accrediting the work in the school. Two rather definite plans are desirable:

1. A project record book for cost accounts and notes relating to the boys record of the project. The State farm accounting books for the farm advisors furnish very excellent and definite guides for record keeping on a truly vocational basis.
2. There should be a fully worked out manual, or text, upon the project basis for each major enterprise chosen as projects. Such manual should be in the pupils' hands to guide them to recognize the problems arising in connection with the best farm practices related thereto; to indicate the best known solutions to such problems; and to give such basic facts and principles of agriculture and related sciences as will make

for intelligent understanding of the development of the project. Such texts should be supplied with reference at each point so that the wealth of material organized upon other bases may be made available for the project practices and study.

With such helps very definite and satisfactory matter is at hand for teaching purposes when the instructor visits the farm.

We have in every aspect of vocational agriculture ideal teaching situations and it remains for us to show the efficacy of the project method of instruction, especially in agriculture, where we have before us the whole problem unfettered by traditions or the methods of formal class room instruction.

Dr. R. W. Stimson, State Supervisor of Massachusetts, discussed this paper, bringing out the following points: There are three levels in the teaching of vocational agriculture. The lowest level is the mastering of the skills of agriculture. In this he said we are partners with the best farmers. However, we cannot trust the skill gained alone on the farm to furnish all the vocational training. We must look to the other level, that of training, not merely doers, but thinkers and observers. During the summer we may teach many things on the spot, not dried specimens of life, but real life as it lives. We may teach at nature's pace. For example, the botany of the corn plant is interesting and teachable taken at every stage of the life history of the corn. Vocational education deals with life-time interests. Non-vocational education uses material and finishes it up. The teacher must have a wealth of suggestions as to observing the rich related science matter in agriculture.

The highest level of instruction, according to Stimson, deals with farm management. It relates to the whole home farm as a project for consideration.

Dr. Jarvis, of the Bureau of Education, reported on practice teaching in teacher-training institutions. His summaries were as follows: That practice schools of some sort, were organized in connection with all teacher training institutions. Most of them utilize a local city high school for their apprentice teaching. His conclusions suggested the following standards:

1. Practice schools should be vocational;
2. Not less than sixty hours student teaching should be accepted;
3. Rural conditions should obtain where possible;
4. Teachers should be supervised;
5. Home projects should be supervised;
6. Student teachers should participate in community work.

Mr. Malby, of Georgia, reported for the Committee on Part Time and Short Courses. His summaries were as follows: Short courses were conducted last year in sixteen states. A small amount of work along this line is being done. There is need of more prepared men for this work. The supervisors favor the extension of part time work. The following types of schools, or groups, are common, (1) pupils in outlying schools; (2) groups in three months courses in the high school; (3) groups of farm boys (for ninety minutes a day in Agriculture, for a few weeks); (4) short courses for adult farmers; (5) evening courses in agriculture; (6) men and boys in city life. The methods employed in short courses are in the making. Farmers do not come and ask for these courses. Teachers must sell them. The content of such courses should be not general, but rather definite. The tendency is for three or four months short course periods. Agriculture teachers are not wholly prepared to handle these groups. Practical farmers are not successful as teachers. The States doing most in this work are Iowa, which has an excellent State program, with a man as county organizer; New Jersey, with special teachers in some counties; Pennsylvania, employing county directors; New Mexico, with the circuit plan for vocational teaching; Georgia, with district supervisors organizing groups.

Mr. C. H. Lane, Federal Supervisor of Vocational Agriculture, reported on the progress of vocational agriculture in the country. His summaries may interest us. The last report shows 1,375 all-day schools with 31,301 students, and 117 short courses with 2,487 students. The total income from projects from 38 States reported was \$832,487.00. This is a larger amount than the federal appropriation for vocational agriculture that year. The teacher training institutions reported 2310 university students in teacher training for vocational agriculture.

One of the most illuminating and definitely profitable papers brought before our section was that of Dr. W. W. Charters, formerly dean of our College of Education at Illinois. Some of the high spots in his address were as follows: The tendency of college graduates is to copy the methods of instruction used in the college. These methods are not suitable for the boys in high school. We must therefore look to methods of teaching if our vocational agriculture is to succeed. We cannot assure that certain fundamental subjects, either in psychology, pedagogy, or agriculture will carry over with a content of knowledge its application to teaching or farming. Dr. Charters suggested the use of the project method as a means of improving our teaching in service. By this method an interested teacher or supervisor may make analysis of his own task of teaching, of his problems met in the class room, listing the difficulties which he meets, then, by noting how other teachers meet these difficulties, he may find help in solving his own problems. Reference to psychology and pedagogy at the points of difficulty may assist in better teaching methods. Teaching of vocational agriculture from beginning to end is a project in itself and the rules and principles of the project method as applied to agriculture may be applied to the teaching job.

On the whole, one cannot sit through one of these national meetings without feeling that vocational agriculture is a large work calling for the best which trained men can offer, and holding out to young men a career of promise and permanent usefulness. The country is committed to a policy of vocational education and teachers of agriculture are leading the way to the solution of the more difficult problems in this new and promising field.

Class Project

E. B. Henderson, Bridgeport

I wish to show in this paper the results of a dairy project that twelve boys in my animal husbandry class have been working since Sept. 10th. I am sure that Mr. Augustus, who will follow me in a discussion will be able to present more facts, for it was really from his swine project that we decided at the close of school last spring, to try a live stock project. Our plan for this did not seem advisable with the unsettled condition of the hog market, and when Mr. Colvin suggested a dairy project instead, we at once began work.

So far, we have found it a very valuable aid in the study of animal husbandry and we are accomplishing much better results than I had expected to obtain.

We had several propositions submitted to the class before we finally decided to purchase the cows. The Board of Education offered to furnish all the money to finance the scheme. Three men in the county offered us cows provided we would keep records for them. We could have gotten four holstein cows from one man, and two jerseys, one each, from the other two men, and the profits were to go to the class after paying for the feed. We rejected both plans, the first for fear the boys would not take proper interest if the cows belonged to the school and the latter because we did not possess enough confidence in ourselves at that time to care for another person's stock.

The arrangements we have made, I believe will be very satisfactory, each boy paying thirty-five dollars into a fund for the purchasing of the cows and feed. This money was secured at the local banks, at one bank no interest was asked and at the other a very low rate was given the boys. Under this plan the Board of Education pays for all of the equipment and furnished the money, amounting to one hundred twenty-five dollars for changing the barn for dairy purposes that stands on the high school field.

The look out for cows was started as soon as we had a bank account. We drove through the country after school and on Saturdays looking for suitable cattle. Four cows, two holsteins and two jerseys, were bought at prices ranging from sixty-five to one hundred and twenty dollars. I think the search for cows was one of the most interesting parts of the project so far, for it was surprising how many poor grades of cows and animals that were sure to be boarders that could have been purchased.

The first three weeks of school we used our ninety-minute periods building a crib, stanchions, fencing and doing concrete work. Since that time most of the work has been after school hours. We have found the big problems in this project to be some arrangements for caring for the stock. Only three boys of the twelve in our class live in town, the others live several miles in the country and have other projects. I think we have arranged for all the boys to care for the cows and in a way that the work will not become a drudgery. Every two weeks shifts of two boys do the work, not including Saturday and Sunday, then the three living in town do the milking. Boys who live near town have been taking the shifts so far, leaving the winter months for those who will stay in town when it becomes bad weather. Regular hours for milking have been established, work beginning at 5 o'clock in the evening and 6 o'clock in the morning, in all taking about four hours a day for the two boys.

A feed room for the mixing and weighing of feeds has been built, and a record of each pound of milk and feed is kept both at the barn and in the class room. The ration has been changed from time to time. At present we are feeding a balanced ration with a nutritive ration of one to four. The class is taking an active part in buying feed and have become so familiar with these that they can tell off-hand the price of a pound of protein in various feeds.

The milk is bottled in the high school building where we have a room fitted for that purpose, then is delivered to the people in town. Our average daily production is about fifty quarts of milk, which we sell for fifteen cents per quart. So far we have had no trouble finding customers and could sell twice as much milk if we had it for sale. The first month we sold milk amounting to two hundred and eight dollars and paid eighty-three dollars for feed, including sixteen dollars paid for insurance, leaving a profit of one hundred and twenty-five dollars for the milk. On Nov. 10th we have sold milk amounting to four hundred dollars and purchased one hundred seventy dollars worth of feed, leaving a profit of two hundred thirty dollars for the two months. At this rate the boys will have the cows clear early in the month of December and should have eighty or ninety dollars apiece at the end of the school year provided they can sell the cows for the prices that were paid for them. This much proves that we will not loose money on our enterprise, but we have not so much interest in the money as the training the boys will receive. As one father said: "If my son loses the money he put into the cows, I will consider the education worth twice as much." Another parent said: "Now, that's the kind of agriculture to teach." I find that the public has taken more interest in this class than in any of my other classes and that the boys not taking agriculture also have become interested in the work. Several of these boys have come to me for our feed rations. One boy who used our feed secured an increase of a gallon of milk at each milking and at a cost of little more than he had paid for the other feed.

There is seldom a day passes that the class does not have new problems. We find that individual cows vary a great deal in the amount of milk they give and we try to find the causes. Is it the food? Lack of water? Regularity of milking, or milkers? Another time two cows are off feed and again we have a sick cow that calls for a veterinary. I think there are many reasons why a class in animal husbandry should have some kind of stock, and the cow answers the purpose very well. Possibly no other animal will show so plainly the effect of care, change of feed, weather, or other conditions than the milk cow does and it is from the standpoint of feeding and care that we wish to use our cows. Later when the cows have been paid for we will feed them unbalanced rations and try other experiments. One objection to our project is that cows are grades and we cannot use them when we take up the study of breeding animals. But we have planned since we have so far been financially successful to buy a good registered cow, and have been offered one at three hundred dollars and can sell the calf for two hundred dollars providing it is a female. The boys have found this to be a fact. The cow that cost one hundred and twenty dollars will pay for herself long before the sixty-five dollar cow, this cow taking sweepstakes over all other dairy cattle at the local stock show this fall, cutting her cost down to ninety-five dollars. When I found I was to be on this program I asked the boys to write fifteen hundred word themes about their project. To show the interest they have taken I will quote a few lines from their papers. One boy writes: "While at work with the cows we are not down town loafing and spending money." "Father was surprised at the small amount of money I asked for last week." Another boy says: "If a student sits down and studies three hours each week for a year out of a book about a dairy project he would know no more than if he was to take part in a project for two months, for in studying about this things usually pass in one ear and out of the other." A third boy said, "Such things as this project may cause not only the boys in the class to become interested in it, but many boys outside of school will see the advantage of the farm over the city job and will move to the farm." A fourth boy writes: "Personally, I think this is one of the best things a high school agricultural class can do, and will try to do my share in making it a success, although I haven't helped to "pail" the cows so far; I will serve my term next winter when it's cold." Because of their interest this class has accomplished much more in a short time in the study of feeding than other classes have in the past.

I hesitated about starting the project with this class for as I have said most of the class are farmer boys and I was afraid they would assume the attitude that any one could milk cows or build sheds, but the first day's work at the barn proved to me that such was not the case and that they needed to have more practical work, for not a boy in the class knew how to mix concrete.

So far nothing has been said of the disadvantage we have to contend with. Some boys, not having cars, find it inconvenient to deliver the milk. Milk bottles are lost and difficult to collect, some customers are not easy to please. It is some times an inconvenience to milk, especially on Sunday evenings. One or two boys are not dependable. We have as yet no accurate system of keeping account of the milk customers. Some customers pay each day, others at the end of each week. In several cases the boys have found it difficult to keep the accounts accurate. Under such conditions the loss is charged to their accounts.

All feed has been bought at very high prices this year. I hope to eliminate part of the cost of feed by having my soil and crops class rent ground for the planting of corn and forage crops next spring, that they may use their own crop for a dairy herd next fall when we hope to get a registered herd established.

There are several questions that may be asked in the discussion of this project. One would be, "How much of the teacher's time does it require? At first I worked with the boys each morning and evening. Lately they have

been doing most of the work alone, but I find that some supervision is necessary; for customers may be missed, something forgotten at the barn, and there is competition among the boys, each trying to get the largest weekly products, which results in heavy feeding. Another question that may be asked, "Are these boys favored by agriculture? Would they be in school if it were not for agriculture? Are their averages lower this year? I asked Mr. Hanna, our principal, who has helped us very much, to give me the records of the boys.

	This year	Last year	Other grades
Chris Abell	86	86—85	80—89—81
Fred Brunson	78	78	84—76—75
Raymond Caldwell	84	83—88	85—85—75
Carl Martin	81	84—85	75—85—80
Gerold Conner	71	73	70—75—74
Earl Chaney	84	79—88	88—79—94
Hugh Cunningham	93	88—96	92—90—95
Raymond Couch	88	88—86	87—94—96
Dwight Harper	85	78	89—85—87
Wendell Schrader	89	91—90	92—88—90
Albert Seed	81	80—92	86—71—87
Desmond Utterback	87	89—90	85—96—96

The records show that the boy's averages as a whole this year are higher than last year. Two boys would have dropped out of school if they did not have an interest in the cows. The grade in agriculture is not higher than that of other subjects. Are we specializing?

We hear a great deal about specializing and while Southern Illinois should be an ideal country for dairying, we do not wish to emphasize the study of dairying more than other live stock of equal importance to that part of the state, and hope the class will apply the practical training together with the importance of proper care of animals gained through this work to other live stock.

I wish to say in conclusion that we are working the project on a very small scale, but that we could handle twice the number of cows with very little more equipment. That other live stock projects with the boys working together should be successful, proving the value of the science and practical training and may further encourage the boys in the work of individual projects.

The Use of the Ninety Minute Period

A. C. Brockley, Harvey

I will briefly present the topic of "The Use of the Ninety Minute Period." The ninety minute period is the means of bringing into twentieth century co-operation the time, the place, the teacher, and the pupil. This has been the subject of more or less discussion ever since Smith-Hughes Vocational Agriculture was introduced into Illinois. This double-period gives to Vocational Agriculture a real value. It enables the teacher to make immediate use of the interest and enthusiasm initiated during the first period, because these things are at once applied to the assignment for the following day, and on the other hand, all the points developed in the first period and not entirely clear to the slow student may be at once illuminated before the interest in the subject has abated. "Striking while the iron is hot" produces a far more satisfactory result than waiting for twenty-four hours for the iron to cool before the striking is done.

Practically every teacher uses his double period differently. At our school—if you will excuse the reference—we have the one hundred twenty-minute period or two hour session, divided as follows: to recitation, class study or

laboratory and assignment of work. The boys are given unusual privileges. The classroom resembles more nearly a workshop than a recitation hall. Pupils are constantly supervised while engaged in studying. The ninety minute period is essentially a laboratory hour—not a reiteration or memory exhibition. The important thing is to arouse pupils to work constructively and economically. Boys soon realize that marks and promotion depend upon evidence of individual effort every day rather than the “hit and miss” chances to answer questions not of their own achievements.

Two purposes stand out clearly in organizing the ninety minute period after this fashion:

1. It makes class work more effective, by definitely differentiating between recitation, study and assignment.

2. It raises the standard of the work, by making the recitation more sharp and positive; the class study more helpful in teaching students how to attack a new problem; the assignment develops as an outgrowth of class study and by causing the student to feel a greater responsibility in his individual work. The recitation period should be used primarily for interpretative and supplementary discussion, although testing should not be neglected.

The class study is the opening of the study of a specific topic or problem such as manufacture of sugar from the sugar beet or cost of producing a ton of beets in the Soils and Crop Class. Here the textbook, outlines, notebooks, supplementary readings, reference books and magazines come into use. Textbooks are tools to help the student in building his house of knowledge. Their use is a most important process in social life, and they are the most economical means of instruction in school. Textbook study should be supplemented by other required readings and by independent investigations by students upon assigned topics.

Along with texts go reference works, but care must be taken and time, too, in showing the pupil how to use them to advantage. For required supplementary readings, sufficient duplicate copies of a few serviceable books should be available, and exact page assignments to these should be made. My students find outlining and underscoring a great help in study of the text. Method of study is the chief problem of the teacher and we have to be constantly asking ourselves the question, “What do I wish my students to do in studying this topic?” The study is based largely upon certain facts, data or materials previously collected by the students and are before them to work upon. Possibly a trip has been made to the Sugar Mill or figures have been obtained from growers regarding costs of production. Individual assignments are here made on the topical study or project problem and these are worked out so that they will be attractive enough for the pupils to want to do them. The following types of assignments are made use of, mainly,—page, paragraph, topical, problem, questions and group assignments. They know what is expected, when and how to get it. Here, however, valuable suggestions and guidance by the teacher are necessary in order to use your ninety minutes economically. Again, this double period almost entirely eliminates study away from the school building, and, therefore, aids the teacher under whose eyes the work is done, to secure independent, honest, first-hand work.

No small part of the pupils' work consists of handing in reports or papers on various topics, and when well done is to be commended. The loose-leaf notebook is a convenient device to use in this connection, as new information can be added to from time to time.

The ninety minute period is a big laboratory period and as such there is a constant application of studying by the performing of experiments, working out problems and carrying on of home projects. This is vital. Application is made daily. Up in our county of Cook every school has the slogan, “Learn by doing.” What the boy does for himself under watchful guidance creates

skill and confidence. Superintendent Tobin says, "it is correct doing that counts." The ability to drive a tractor, make a feed hopper, cultivate a good crop, lime a field or spray an orchard is the result of constant application and eventually establishes the end of learning.

The conference is a portion of the study period that has a valuable place in the ninety-minute period. This is informal, personal, friendly and offers possibilities of influence that you can get in no other way. At this time no assignment of lessons is made and no preparation required of the pupils. It serves the following purposes:

1. To improve the quality of work.
2. To give special and individual help to weak and backward pupils or those temporarily disabled on account of illness and who are behind in their work.

The conference must be definite, informal and friendly. Opportunity should be given pupils to state their problems clearly, and by tactful questions the teacher should encourage them to discuss phases of studying that instructive timidity otherwise would prevent them from mentioning, a sympathetic interest may thus arise during the conference that otherwise might not have been affected. The results of these conferences should be recorded since they can be made a basis of marking. The teacher may be better able to judge of the amount and quality of the pupils' progress.

It seems that the following benefits may be derived from the conference:

1. A happy combination of class and individual.
2. It helps the pupil to keep up to grade.
3. It serves as a "clearing house."
4. It encourages the pupil to express his doubts and difficulties without fear of low grades.
5. It stimulates personal feeling between student and teacher alike.

In concluding this paper I wish to give a composite list of what I term the results of using the ninety-minute period as outlined—statements I may say obtained from my co-workers in this state.

1. Makes classroom a live workshop.
2. Provides an atmosphere of study.
3. Provides better prepared lessons.
4. Prevents waste of energy.
5. It saves time.
6. Aids discipline.
7. Allows leisure for extra school work, home projects, athletics, social and other activities without neglecting school work.

Supervised Farm Practice **W. G. Wagner, Belleflower**

In trying to discuss the topic, Supervised Farm Practice, I am reminded of a time I was invited out to dinner. I had taken a fairly good-sized bite of beef. The meat was tough. The more I chewed it, the larger it became. To the disgust of my host and myself, I took it from my mouth and tore it apart with my hands. It is the same way with my topic today. The more I think about it, the larger it becomes, so I will chew it awhile and then let those who follow me do the real work of tearing it apart.

I do not like the word practice. I rather think the project should be work rather than practice. Before we can hope to do the most efficient work in our

respective communities, we must first get a hold on the community. I have done this through what I call my "grown-ups project." I have organized a township better farming association which is affiliated with the county association. We have been organized about a year. Since the time of organization we have shipped in eight cars of rock phosphate, ten cars of limestone, and two of potatoes, and shipped out six cars of live stock. We have held six meetings at which we have had out-of-town speakers. It is needless to say that the farmers are with me in whatever I start. Nor is it necessary for me to say that I always have something to do and that I always find a welcome at the farm homes.

I hope you won't get the idea that my adult project takes all of my time, and that my boys do not get to see me very often. Just what are the values of the project? In my opinion the values are, first, to give the boys and girls an impetus to stay on the farm; second, to make country life richer and fuller; third, to correlate science with farming. As a result of these values the problem of increased production will take care of itself. And last but not least the project should teach co-operation of agricultural interests.

I believe we are all familiar with the ways and means in which the project may best obtain the foregoing values.

I am not a believer in putting a size limit on the project, nor do I believe it absolutely necessary that the boy own the project. I have not attempted to set any limitations on the projects except that they be carried through an entire year if at all possible. I have found that there are some cases where it is impossible for the boy to own his own project. It may be because of home opposition, or it may be because of money conditions. But I have advised the boys to go on their own hook and buy the needed animals or whatever it may be to own the project. I have found that in the main the boys take a better interest in the project if it is their own. But on the other hand, I have a boy who has been converted to staying on the farm by raising two pure bred Percheron colts for his father. Another teacher has told me of two boys who will eventually be pure bred Holstein breeders by taking care of the home dairy herd. And many other like examples have come to my notice. I do not limit the size of the projects because it is the experience and knowledge that the boys should receive. I have learned that it is not always the largest project that turns out the best. The one project which I think has proven the best in the way of doing the most good proved an utter failure from the financial standpoint. The failure was no fault of the boy's because he had forty of his best developed chickens stolen from him. We should be careful in setting the boys' mind and ideals too high. Too often the unforeseen steals in, changing the whole situation. To illustrate, I had two boys who were going into the pure bred business. They bought the start and raised a fine lot of pigs. We all know what has happened to the hog market. Had I put only the pure bred idea into the boys' heads, that project would have been worse than a failure. As it was, the boys conducted the project so that the pigs can go to market, and with the differences between corn and hog prices, make a neat profit on this project. These same boys have fifty-two fall pigs from four sows. Another project of mine was a boy who had a fall gilt. He raised six pigs from her. He has the gilt and ten fall pigs and a boar pig and \$50.00 in money after paying all expenses. This boy is on the way to become a live stock farmer. Besides the gain to the boy, his father has been converted to the pure bred live stock idea. In my opinion this project was very much more of a success than the \$50.00 profit indicates.

"How often do you visit the boys?" is a question often asked me. I try to get the temperature of the boy's project from his conversations. Learn your boys and you will never fail to know when the indicator points to the necessity of a visit. But I make it a rule to visit all of the boys at least once a week. I have found that the projects as a rule will make enough of a change during

the week to bring forth new objects for study and observation. To illustrate, take for example a boy with a poultry project. The eggs are set and by the next week they may be tested for fertility. Here the boy may learn the causes of infertile eggs, etc. The next week the boy can study the further development of the chick and so on until he has carried his project through all the operations of a year. I try to see that the project is carried on for a year because it has been my experience that when left to shift along for six months, too often things go to pieces, thereby losing the whole value of the work. What do I do when I visit the boys? No, I do not always call for a report nor talk about the project unless the boy has some problems on which he needs help. Before I visit a project I usually look up some references on the phase of the project which it will be in. In this way, the boy as often as possible solves his own problems, but I make sure on my next visit that the solution has been obtained. I try to leave some new idea with the older folks each time I visit. For instance, I have given the plans for chicken houses, hog houses, corn cribs, etc., on some of my visits. But I always make sure before leaving that all is well with the boy and his project.

Many teachers have the difficulty of getting the boy to leave a project. I have the same trouble. To eliminate this trouble, I have started clubs in my whole district so that by the time the boys and girls are in High School their project is well along. I am not a believer in too much limitation as to the kind of a project. My idea is to get the project started and then by showing or by some phase of the project, gripping the boy, he has been won for better agriculture. For illustration I know of two boys who have taken keener interest in live stock just from the showing they made during the time these boys were keeping farm books of the farm.

We should be careful in what we give publicity to. For example, one teacher has published the fact that his boys raised pork for \$.06 per pound when he was feeding corn which cost from \$1.00 to \$2.00 per bushel. The boys' figures may show this, but when I hear of such being done I am reminded of Professor W. J. Carmichael. He told us of visiting a farmer who had a fine bunch of shoats. The farmer said he fed only corn and water. But soon after the man left for the field his wife carried out about ten gallons of skim milk to the hogs. We will never get the city people to see the facts as they are if we publish \$.06 pork.

Become a part of the community in which you live, show a willingness to help the farmers in whatever problems they will need help. When they find out that you are willing and ready and capable of helping them, you have gone a long ways in putting vocational agriculture on its feet in that community. You may wonder what this has to do with supervised farm practice. But I have learned that your project is the one upon which more depends than all others. Your boys may fail and no bad results will follow. But if you fail in your project you had best start looking for a new job. Your project is the community. Do it well and you will have no need to worry over your boys' projects, for they will be successful as a matter of being in tune with the general atmosphere.

3. BIOLOGY SECTION

The Biology Section met in the Y. W. C. A. Assembly Room at 9 a. m., John H. Whitten presiding. The entire program was carried out as printed.

Objectives as a Basis for Curriculum Reconstruction was presented by G. J. Koons, Pontiac Township High School. The recognition of biology by administrative officers, said Mr. Koons, will come

when teachers of the subject know better and press more vigorously the objectives to be obtained. It is important that the teacher be engaged in new problems so that the guiding aims of the subject may be attained with greater certainty. His paper follows:

Objectives as a Basis for Curriculum Reconstruction

By Prin. G. J. Koons, Township High School, Pontiac, Illinois

Scientific school management requires that the problems of curriculum construction be solved in accordance with the methods of scientific procedure. The High School Conference has undertaken to accomplish this very difficult task. It is the intention of the Director of the Conference that the results of this undertaking shall be the outcome of the careful investigation and co-operative effort on the part of the whole conference. If we fail to secure satisfactory results in the solution of the problem it will be largely because of the lack of co-operation on the part of members of the Conference. However, if we only succeed in making a beginning toward a solution and the problem is given careful consideration by high school teachers in the different section meetings and at the general sessions much good will undoubtedly result. Professor Kemp, formerly of the Indiana State Normal School, often remarked that it is "better to stir a question up without settling it than to settle it without stirring it up." It has often been the case that in our individual schools the matter of curriculum arrangement has been settled without a sufficient stirring up of the question. At least we may hope to have the question pretty thoroughly stirred up at this annual meeting of the Conference.

Two present-day tendencies in secondary education are illustrated in the manner in which this discussion is being carried on in the High School Conference. First, it illustrates the fact that we are coming to realize that there is a real problem of curriculum reconstruction and that it is worthy of the most careful consideration. Second, by sending representatives from the administrative section to the other section meetings, the fact is illustrated that administrative officers are slowly but surely awakening to the fact that the curriculum as well as many other matters pertaining to administration should be determined as the result of the co-operative work of both the administrative and the regular teaching force of the high school.

It is in keeping with the times that there is a distinct democratic trend in educational affairs and that the rank and file of teachers are being called upon to assist in determining school policies and to take part in the consideration of the construction of school curriculums. There was a time, and in many instances such a condition still exists, when the high school principal borrowed ready-made a curriculum from some other school without giving any consideration whatever as to whether or not it was well adapted to meet the local needs and conditions of the community in which the high school was located; or in some cases proceeded out of the fullness of his own wisdom to construct a curriculum without taking into consideration the opinions of those able to give real constructive help—the regular teachers of the different subjects in his school. Isabel Rockwell, in a recent number of the Survey, voices a criticism of the type of school administration now common. Her point of view is worthy of the careful consideration of every school administrator. Miss Rockwell recently left the teaching profession to take up work in a large department store because, as she says, she found there a larger opportunity for individual initiative and development.

The important thing in curriculum reconstruction is to decide what subjects shall be included and what ones shall be omitted. In the Conference discussions on the subject thus far the content of the different subjects has also

been included. In the present discussion, however, the matter of content of the biological courses will be left for the next speaker. Dr. Caldwell can undoubtedly give us much help on the question now under discussion. One of the primary purposes of the Lincoln School of Columbia University, of which Dr. Caldwell is the Principal, is to experimentally determine the relative importance and the real place in the curriculum of the different subjects. We shall await with great interest the final results of the experimental work that is now under way in the Lincoln School. We shall be glad to learn of any tentative conclusions reached as a result of the work of his school.

In selecting or rejecting subjects or materials for a school curriculum it is necessary that we have a basis for judging the relative values of the different subjects. We need to inquire as to what things we really expect to accomplish by a high school education. In the light of the purposes or objectives of high school education we may intelligently consider and decide just what things should be taught in the high school and what things should or may be omitted. We shall probably all agree that the aims or objectives should be carefully determined and when so determined should be the determining factor in acceptance or rejection of the materials of instruction. However, it will probably be true here as it has been true in the administrative group immediately after we begin discussing just what are the objectives of secondary education our agreement will cease.

From the earliest times different educational systems have set up different standards of attainment. The Greeks held physical development as an important objective of education. Public speaking was stressed in the Roman system. In more recent times Herbert Spencer advocated complete living as the function of education. Arnold Tompkins set up the highest possible individual development as the goal to be attained. Dr. W. C. Bagley would have us educate the boys and girls for social efficiency. At various times we have heard character, efficiency, culture, the ability to make a living, advanced as the important ends to be attained. Probably no two of us here would entirely agree as to the exact statement of what we think should be the purpose of education. I am not at all sure that we should wholly agree. However, every high school teacher should have some clearly defined and definite opinions on the subject.

General statement of aim helps in giving a point of view in approaching the solution of our problems. However, the more helpful guides to the teacher are the more immediate or specific statement of aims. Sears illustrates this particular point by a comparison with the procedure in industry. He says, "The owner of a factory not only sets up business success as his ultimate aim, but various aspects of this larger purpose—the purchase of raw materials at the lowest price, the most economical organization of his plant, the simplest and clearest method of accounting, a knowledge of markets—present themselves as clear and definite problems, or aims, through which alone the ultimate goal of business success can be attained." A consideration of the more important sets of specific aims that have been advanced will undoubtedly help us in the final determination of what to us seem the best statement of aims.

Modern education, particularly secondary education, owes a great debt to Herbert Spencer. His writings on education greatly influenced the school men in breaking away from the traditional classical program of education and in introducing as an integral and important part of education the scientific subjects. A large part of his influence is probably due to the fact that he had clearly worked out a definite set of specific aims as a basis for deciding what knowledge is of most worth. You remember that he set up as a general aim "complete living." However, in order to achieve this ultimate goal he set up certain definite specific aims. If Spencer were living today and speaking in our modern educational language he would call "complete living" a major objective and his subordinate aims minor objectives. He says, "Our first step must

obviously be to classify, in the order of their importance, the leading kinds of activity which constitute human life." They may naturally be arranged into:

1. Those activities which directly minister to self-preservation (health).
2. Those activities, which by securing the necessities of life, indirectly minister to self-preservation.
3. Those activities which have for their end the rearing and discipline of offspring.
4. Those activities which are involved in the maintenance of proper social and political relations.
5. Those miscellaneous activities which make up the leisure part of life devoted to the gratification of the tastes and feelings (including the relaxations, pleasures and amusements filling leisure hours).

We are forced to admit that Spencer in this original statement of aims included practically all that modern education has been seeking to accomplish. In the light of these aims he effectively criticised the education of his time and recommended additions to the curriculum, very many of which were finally adopted. As we study later statements of specific aims we shall see that but little has been added to those advocated by Spencer.

In his book on Classroom Organization and Control, J. B. Sears, of Leland Stanford University sets up five specific aims of education:

1. Health and physical vigor.
2. Morality.
3. Knowledge.
4. The vocational or utilitarian aim.
5. The esthetic aim.

His first aim, health, is in accord with Spencer's first aim. The second, morality, is probably implied in some of Spencer's aims, but it is not given special emphasis. Sears would emphasize under moral education "habits of personal cleanliness, fair play in group games, respect for elders, all matters of common honesty and politeness, ideals of civic honor and public service, and knowledge and judgment concerning the common moral situations to be met in ordinary community life." He believes that training along these lines is "essential" and "achievable" in the school. He thinks knowledge is the most obvious aim of all and the one that is most emphasized in the schools. He recommends, however, that we seek knowledge only that we may act. Spencer did not mention knowledge but probably thought that it would be implied as a means of accomplishing his other objectives.

A recent statement of the aims of education was made by a Commission on the Reorganization of Secondary Education appointed by the National Educational Association. The reports of the different committees working under this Commission have already in many ways modified high school practice. One reason that this Commission has done such effective work is that they began by setting up certain definite standards of attainment or objectives for high school education. They set up the following seven objectives of education:

1. Health.
2. Command of the Fundamental Processes.
3. Worthy Home-membership.
4. Vocation.
5. Citizenship.
6. Worthy Use of Leisure.
7. Ethical Character.

This statement of aims by the National Commission is a good one. Both lists begin with health as a fundamental objective. Worthy home-membership, vocation, citizenship are included in Spencer's list although stated in a somewhat different way. Worthy use of leisure coincides with Spencer's fifth but the interpretation is different. To treat the mind is not mentioned in the N. E. A. list. Two new objectives, command of the fundamental processes and ethical character, do not appear in Spencer's list. By command of the fundamental processes the N. E. A. Commission mean that modern life demands that the schools give the children facility in certain fundamental processes such as reading, writing and arithmetical computations. We must necessarily admit that this is an important function of our schools, particularly the elementary schools. The objective ethical character implies what we have long meant when we spoke of the function of the school as that of forming character. The N. E. A. Commission has the following to say concerning ethical character as an objective:

"In a democratic society ethical character becomes paramount among the objectives of the secondary school. Among the means for developing ethical character may be mentioned the wise selection of content and methods of instruction in all subjects of study, the social contacts of pupils one with another and with their teachers, the opportunities afforded by the organization and administration of the school for the development on the part of pupils of the sense of personal responsibility and initiative, and, above all, the spirit of service and the principles of true democracy which should permeate the entire school—principal, teachers and pupils." The report further states that "No curriculum in the secondary school can be regarded as satisfactory unless it gives due attention to each of the objectives of education as outlined."

A statement of the aims of education have been worked out by a committee of our High School Conference. A beginning was made year before last. Last year the committee known as the Organizing and Advisory Committee for Curriculum Reconstruction reported to the Conference recommending that we accept at least tentatively as a basis for discussion the four objectives of education:

1. Health.
2. Wealth.
3. Association.
4. Beauty.

These four objectives as reported by the Committee are really an adaptation to education of the six fundamental human interests as set forth by Professor Albion Small in his general sociology. He names as the six fundamental human interests: Health, wealth, sociability, beauty, knowledge and righteousness. At first thought we may be inclined to question whether or not the Conference Committee's four objectives are really an improvement over the N. E. A. list. However, as we consider them more carefully I believe we can see that they constitute a good statement of what we are trying to accomplish in our school work.

Health is the only objective appearing on each of the three lists of objectives considered. In spite of the long and unanimous agreement that promotion of health should be one of the important aims in our school work, in but few cases do we find provision for an adequate health program in the curriculum of our high schools. From an investigation made of the work done in physiology in the high schools of Illinois by the speaker the conclusion was reached that physiology was one of the most neglected subjects in the entire high school curriculum. There has been some improvement in the last few years. However, much yet remains to be done to give health instruction its proper place in our high school curriculum. The Biology Section might well assist in the movement started for curriculum reconstruction by insisting that

physiology and health instruction be given a proper place, with a sufficient time allowance, and that it be taught by teachers who have had special preparation for teaching it.

The Committee's second objective, wealth, may not meet at first thought with as unanimous approval as the first one. Wealth is something that most people, even teachers of biology, would be very glad to obtain but would hesitate to set it down as one of the specific ends of education. However, this popular conception of wealth was not what the committee had in mind when making it one of the objectives of education. In the words of the Committee, "The term wealth is not used to imply great riches. It is used in the economic sense to signify command of economic goods. In this sense 'the peasant's hut is as much wealth as the prince's palace.'" * * * "By whatever term we call it, there is no question that economic satisfaction is, and has long been, an objective in education. And the educated world has been fairly successful in attaining the objective. * * * Nations which have the least illiteracy have the greatest wealth and earning capacity. The same applies to states of these United States and to groups of individuals. Education promotes wealth." Spencer probably meant about the same thing when he said that education should teach us "in what way to manage our affairs." It is probably implied in the vocational aim of education. It is unfortunate that the committee could not find a better word than wealth to express what they had in mind for this objective.

Association, the third objective proposed by the Committee, means, according to the report, "entering into right relations with one another whereby happiness and efficiency may be promoted in all departments of life. The attainment of this goal involves teamwork, the sinking of self for the good of the group, playing the game like a good sport with honesty, truth, justice and the square deal; with good cheer, courtesy and modesty; with courage and obedience to the law and to rightful authority; with appreciation of men and with appreciation of the social character of modern industry that makes the humblest task a joyful service to others." In other words, the Committee appears to mean that association is the adjustment of ourselves to the human element with which we come in contact. This objective has much in common with Dr. Bagley's social efficiency as an aim in education.

Beauty is submitted by the Committee as the fourth and last objective. We probably need the committee's interpretation of this objective in order to get their point of view. They say: "We believe that art should touch with its refining power the lives of more men and women in America. Art can furnish satisfactions when material wealth fails. The poor may still enjoy their music; their love of the beautiful may be satisfied without large expenditures in these days of free public libraries, parks and art museums. To be something of an artist oneself is to have an unfailing source of happiness and refinement. Without the refinements of the beautiful, material wealth becomes blatant and disgusting and fails to minister to the happiness of the rich. A sense of the beautiful in the laborer adds value to the products of labor; in political life it builds the city beautiful; in social life it decorates, enriches and ennobles all association.

Whether or not we are ready to accept the Conference Committee's statement of objectives as the best yet presented, I feel sure that after we have given them a careful consideration we must admit that they include the things we desire to accomplish in high school education. They will undoubtedly furnish a basis for curriculum construction. The principle difficulty will lie in the fact that the real meaning of the objective is likely to be misunderstood because in one or two cases the meaning is somewhat different from the popular conception of the term. Hence it will be necessary in most instances to accompany a statement of these objectives with an explanation of the exact meaning of each one. However, I believe that we shall agree that objectives proposed by

the Committee may be accepted tentatively as a basis for discussion and as a first step in a scientific investigation of the problem.

Biology teachers ought to be vitally interested in the statement of the aims of secondary education because of the fact that such a statement of aims when accepted by the administrative authorities of a school will determine the place and relative importance of the biological subjects in the high school curriculum. If the teachers of the biological subjects thoroughly understand the basis of acceptance and rejection of subjects and subject matter they can better present the claims of their subjects. The time has passed when a biological subject should merely present an organized summary of all of the known facts in that particular field. There is a large amount of material in each of the biological subjects which has no place in a high school course because of the fact that it in no way serves to accomplish any desirable specific purpose of secondary education. If the Committee's statement of the objectives are not satisfactory we desire your assistance in revising them or in working out a better statement of them. The important thing is that we realize fully that when a curriculum is constructed or reconstructed that either consciously or unconsciously we accept or reject material in the light of some set of specific aims. The real needs of life interests of the children are the bases of acceptance or rejection. Biology teachers because of their training in the scientific methods of procedure ought to be able to render material assistance in the scientific solution of this problem. Because of their practical knowledge of the biological subjects they ought to be able to make definite recommendations as to just what biological subjects should be taught, in what sequence, and what should be the content of each.

The foregoing review of the development of the different statements of the objectives of secondary education has been given to make clear what has already been done along this line and to give emphasis to the fact that progress in curriculum construction can only come after we have decided more definitely just what we are trying to accomplish in our work. Much of the inefficiency and lack of progress in our work in the past has been due to the fact that we have been working aimlessly. Let us get together in a statement of objectives. If the Committee's statement of health, wealth, association and beauty are not satisfactory, let us suggest a better statement. It has been suggested that rather than adopt the four objectives submitted it would be better to use a broader term and say that secondary education should serve the pupil's life interests. Life interests would serve well as an objective, but before long it will be necessary to determine just what are the important interests of the pupil that the high school should serve. This brings us back to a statement of specific aims. The important thing to remember is that in our own individual problems of curriculum reconstruction we must adopt some definite and clear statement of objectives. The speaker believes the four aims—health, wealth, association and beauty—furnish a good tentative statement which may be used as a basis for further progress in the solution of this important problem.

Discussions which emphasized the importance of objectives and the practical agreement of the various committees, both state and national, that have been working on the subject, were participated in by Paul G. W. Keller of the Waukegan Township High School, Dr. Downing of Chicago University, Mr. Koons, Clarence Bonnell of the Harrisburg Township High School and others.

Dr. Otis W. Caldwell, the Lincoln School of Teachers College, Columbia University, spoke on The Content and Organization of the Biology Course in a Sequence of Science Studies for all High School Students. The practical agreement of committees of the High School

Conference, the N. E. A. and of similar organizations in England as to objectives of such a course was shown. No formal paper was presented, but mimeograph copies of reports on the subject were distributed and informal discussion followed. Dr. Caldwell plead for less detail and a better grasp of the essentials in presenting biological subjects to high school students. The reports presented are given below:

Reports from Colleges and Universities Regarding the Acceptance of General Science as a College Entrance Subject

It is often asserted by school men that one of the obstacles to improvement of courses of instruction in secondary schools is found in the fact that colleges and universities are unwilling to accept new types of content for college entrance. It is well known, however, that certain colleges and universities have shown much liberality in accepting any courses which, in the judgment of secondary school people, give promise of preparing pupils so that their work may be more thoughtful and more effective. A committee of students of secondary education decided to secure definite information regarding whether colleges and universities formally accept for college entrance the subject commonly known as general science. Those who collected the information are Mr. H. A. Carpenter, Miss Irene Jameson, Miss Martha Shea, Miss Ellen Woodyard, and the writer of this paper.

A list of colleges and universities was prepared with the thought that an extensive sampling would fairly represent the situation throughout the whole country. Between January 29, 1920, and February 19, 1920, a copy of the following letter was sent to each one of the 133 colleges and universities:

"A group of science teachers and administrators who are interested in the various movements which have to do with improvement of science teaching desire to find out which of our advanced educational institutions are now giving full credit for the course which is commonly known as General Science. We refer to the General Science course when used as a full year of introductory science study in the accredited high schools.

"Does your institution accept General Science for entrance credit, and is this credit classified as a science unit?"

At the time of completion of this summary (March 16, 1920) 116 replies have been received. One of these is from an institution which does graduate work only, to which the inquiry was inadvertently sent. There are thus 116 replies to be considered. A summary of the reports follows:

I. Institution to which letters were sent.

A. Kind of institution.

1. State Colleges and Universities.....	57
2. Endowed, Private or City Colleges and Universities.....	76
Total.....	133

B. Geographic distribution of institution.

1. East of the Central States and of a line South from the Eastern line of Ohio	54
2. Central States and Westward.....	79
Total.....	133

II. Replies.

A. Eastern Group.....	49
1. Accept subject for college entrance.....	34
2. Do not accept subject for college entrance.....	15
3. Credit subject as science unit.....	18
4. Credit subject as elective unit.....	8
5. Do not reply whether credited as science unit.....	8
B. Central and Western Group.....	67
1. Accept subject for college entrance.....	65
2. Do not accept subject for college entrance.....	2
3. Credit subject as science unit.....	41
4. Credit subject as elective unit.....	12
5. Do not reply whether credited as science unit.....	12
C. Total replies considered.....	116
D. Total which credit general science for entrance.....	99

There is given below the names of the colleges and universities to which the inquiry was addressed. Those from which no replies have been received are preceded by a "*". Those which report that they do not credit general science for college entrance are preceded by an "†".

Alabama

University of Alabama
Howard College

Arizona

University of Arizona

Arkansas

University of Arkansas
*Ouachita College

California

University of California
Leland Stanford Jr. University
University of Southern California.
College of the Pacific

Colorado

University of Colorado
Colorado School of Mines
University of Denver

Connecticut

†Yale University
†Wesleyan University
Connecticut Agr. College

Delaware

*Delaware College

District of Columbia

American University (strictly graduate)
†Catholic University of America
Georgetown University
Howard University
George Washington University

Florida

*University of Florida
Florida State College for Women

Georgia

- *University of Georgia
- Clark University
- Agnes Scott College

Idaho

- College of Idaho
- University of Idaho

Illinois

- University of Chicago
- †University of Illinois
- Northwestern University

Indiana

- Indiana University
- Wabash College
- †Purdue University
- University of Notre Dame

Iowa

- State University of Iowa
- Drake University

Kansas

- University of Kansas
- Washburn College
- Kansas State Agricultural College

Kentucky

- University of Kentucky
- Berea College

Louisiana

- *Louisiana State University and Agricultural and Mechanical College
- Tulane University of Louisiana

Maine

- Bowdoin College
- University of Maine

Maryland

- †Johns Hopkins University
- †Goucher College
- Maryland State College of Agriculture

Massachusetts

- †Amherst College
- †Smith College
- †Harvard University
- Clark University
- Boston University

Michigan

- University of Michigan
- *Albion College
- *University of Detroit
- Michigan College of Mines

Minnesota

- University of Minnesota
- *College of St. Teresa

Mississippi

- University of Mississippi

Missouri

University of Missouri
 *St. Louis University
 Washington University
 *William Jewell College

Montana

Montana State School of Mines
 University of Montana

Nebraska

University of Nebraska
 Nebraska Wesleyan University

Nevada

State University of Nevada

New Hampshire

†Dartmouth College
 New Hampshire College of Agriculture and Mechanical Arts

New Jersey

Rutgers College
 †Princeton University

New Mexico

University of New Mexico
 New Mexico College of Agriculture and Mechanical Arts

New York

†Columbia University
 Syracuse University
 Hamilton College
 Cornell University
 Colgate University
 †College of the City of New York
 †Vassar College
 New York University

North Carolina

University of North Carolina

North Dakota

University of North Dakota
 Fargo College

Ohio

*Western Reserve University
 University of Cincinnati
 Oberlin College
 Ohio University
 Ohio Wesleyan University
 Ohio State University

Oklahoma

University of Oklahoma
 Oklahoma College for Women -

Oregon

University of Oregon
 Reed College
 Pacific University

Pennsylvania

†Bryn Mawr College
 Swarthmore College
 Lehigh University

- Allegheny College
- University of Pennsylvania
- University of Pittsburgh
- Rhode Island
 - Rhode Island State College
 - Brown University
- South Carolina
 - University of South Carolina
 - *College of Charleston
- South Dakota
 - *State School of Mines
 - University of South Dakota
- Tennessee
 - University of Tennessee
 - George Peabody College for Teachers
 - Fisk University
 - *University of the South
 - Vanderbilt University
- Texas
 - University of Texas
 - *Trinity University
- Utah
 - Agricultural College of Utah
 - University of Utah
- Vermont
 - University of Vermont and State Agricultural College
 - Middlebury College
- Virginia
 - *William & Mary College
 - †Randolph Macon Women's College
 - University of Virginia
 - Washington & Lee University
- Washington
 - State College of Washington
 - University of Washington
- West Virginia
 - West Virginia University
 - Davis & Elkins College
- Wisconsin
 - University of Wisconsin
 - Lawrence College
 - Beloit College
- Wyoming
 - University of Wyoming

Few of the replies include comments beyond specific replies to the inquiries in the letter. However, a few are of special interest and are quoted:

"In reply to your inquiry concerning credit given for General Science courses in high school, I beg to say that we do not give credit for such courses. We require that a year's time be spent on some particular branch of science, such as Chemistry or Botany, etc. We regard the attempt to introduce General Science courses into the schools as unfortunate. It brings science teaching strictly onto a text book basis. The text books presented are little more than reading books, illustrated and interesting, but not offering any thorough training in any science nor even in scientific study. It is adding one more item to the

numerous ones already in our high school curriculum, which are merely informational and not educational, a tendency which I regret very much and which reflects itself seriously in the ability of the high school student to study or work.

"In reply to your letter of January 29, I beg leave to state that the Board of Trustees of the University have not as yet approved credit in General Science for admission to this University. However, the question is now being considered by the faculty and it is possible that recommendation will be made soon to the Board that General Science be added to the list of subjects acceptable for admission to this institution.

"In reply to your inquiry, I beg to state that our committee on admission has not as yet given full credit to the course in general science as included in the first year of the curriculum of some of our high schools. The reason for the attitude of our committee is found in the conviction that this subject has not yet been thoroughly worked out as to content and method of presentation. I may add, however, that in case of individual schools the credit has been granted in the past and in all likelihood we shall extend this privilege to a large number of schools in the future.

"Answering your inquiry of January 29th, I beg to report that this College recognizes the year of work commonly known as "General Science" with the assignment of a full unit of entrance credit and we call the credit thus granted a science unit. We have the additional requirement, however, that each student who enters must present a year-course of work in *one* of the following science subjects: Physics, Chemistry, Biology, Botany, Zoology, Physical Geography.

"Replying to your favor of the thirteenth I can say that for a considerable time we took no account of "General Science," so called; but more recently principles of excellent schools have expressed to us the belief that the course as introduced in their schools was worthy of full credit as a unit in science. Therefore, upon such recommendation we have been accepting the course and crediting it as a unit in science.

"With regard to your letter of Jan. 30th, I have submitted the question of recognition of General Science as an entrance subject to our committee and they are willing to accept it for elective unit if it is the course approved by the Regents and is taught in high school and not in the grades.

"I have your inquiry concerning the granting of credit for a course in general science. If such a course includes acceptable laboratory work, and is done in an accredited high school, we allow one unit for admission to college.

"We give entrance credit for the course in General Science when taken in a standard high school. We have in some cases allowed it to count as the required science for college entrance where evidence was presented that the course was well organized and that proper laboratory work was completed.

"I will say that this University accepts General Science when it includes a substantial amount of competently supervised laboratory work in an accredited high school in fulfillment of the Science requirement for admission to the university.

"In other words, General Science is accepted as an entrance credit and is classified as a Science unit.

"Our own high school, which is the laboratory of the Department of Secondary Education, gives a Course in General Science and particularly emphasizes it. It has been the opinion of our last two professors of Secondary Education that this is the very best form of high school science. Afterwards, we offer Physics, Zoology or Chemistry and some years give Physical Geography and Botany, but we always require a general science course to be taken."

Since 99 of 116 institutions reporting now credit General Science for college entrance, and since some of the remaining 17 institutions express the possibility of an early acceptance of the subject, it is quite evident that colleges and

universities are cooperating in the efforts of secondary school teachers to improve their work. It is well known that some of the institutions which have not formally approved general science for college entrance have approved this course for individual students for several years. Furthermore, the comments in the replies are most timely in calling the attention of science teachers and administrators to the need of keeping general science truly scientific, and of making its content of real significance to pupils. Also it is urged that the general science course be well founded upon adequate experience in laboratory and environmental studies. There is a genuine danger that introductory science courses may sometimes become trivial, and sometimes so fragmentary or textbookish as to be unworthy the name of science. It is highly important that science teachers shall meet the confidence placed in them by still further improvement of the general science course.

The outlines following under three separate heads were also presented by Dr. Caldwell.

A Proposed Course in General Biology, for Trial and Correction **By Charles W. Finley, and Others**

General Headings

- I. The World Food Problem
 - II. Interrelations of Plants and Animals
 - A. Food Relations
 - B. Economic Relations to Man
 - III. Improvement of Plants and Animals
 - IV. The Groups of Plants
 - V. The Groups of Animals
1. *The World Food Problem*
 - Food a necessity
 - The struggle (?) for food
 - Discussion of type problems, production of food on farm, cornfield, wheatfield
 - Discussion of cattle feeding
 - Discussion of garden
 - Discussion of orchard
 - Source of all food supply
 - Plants as producers of food for themselves and for animals
 - Plant structures concerned with food manufacture
 - Leaves, structure and function
 - Roots, structure and function
 - Stems, structures and function
 - Photosynthesis, transportation, storage illustration of seed, fruit, root, etc., storage, use of food
 - Some plants do not make their own foods—dependent plants.
 - Types of foods—
 - Starches, fats, proteins—minerals, salts, water
 - Uses of foods in the human body—
 - Digestion:
 - The digestive tract
 - Digestion in the mouth
 - Digestion in the stomach
 - Intestinal digestion

Absorption**Assimilation**

Digestion, absorption and assimilation of protein (review)

Storage of food in the body

How the body uses stored foods

Dietetics

Amounts of foods required

Mixed vs. single food diets

Introduce many problems in personal efficiency as dependent upon proper nutrition and proper use of digestive system

Hindrances to digestion

Improper mastication

Improperly prepared food

Mental condition as a factor in food digestion

Special foods for special functions as "brain foods."

Alcohol, narcotics and bodily efficiency. Lunt's Statement, insurance company statistics on insurance rates on alcoholics and reasons for differences. Tobacco statistics

Preparation of food

Frying, boiling, broiling, roasting, stewing, etc.

Conservation and preservation of foods—elaborate this section and make intensely practical. Use government and State Bulletins

Cold Storage, dessication, canning, salting, pickling

Saving food during transportation—

Meat, vegetables, fruit, etc.

II. *Interrelations of Plants and Animals***Food Relations**

Protection against enemies is usually protection against serving as food for insects

Independent plants and animals**Parasitism**

Animals parasitic on plants—

Ants, wire-worms, gall insects, Hessian fly

Plants parasitic on animals—

Fish mold, mold on 17-year Cicada, bacteria

Animals parasitic on animals—

Ichneumons on Sphinxes, tape worm, flukes, lice, bed bugs, bot flies, chiggers, screw worm fly, trichina, etc.

Plants parasitic on plants—

Rusts, smuts, cabbage, blights, dodder, chestnut blight, pear blight, beech drops, etc.

Epiphytism—

"Spanish moss," lichens

Saprophytism—

Mushrooms, water mold, shelf fungus, Indian pipe

Carnivorous plants—

Sun dew, pitcher plants, venus fly-trap

Mutualists—

Hermit crab, lichen, ants

Social mutualists—

Ants and plant lice, corn and flicker, bees and red clover

Parasitic plants and animals which cause disease

Parasitism and disease

Disease germs. Develop idea that the rusts, smut, etc., produce disease (malconditions), and introduce the idea of disease in this way

What they are—distribution, size, etc.

Review discussion of bacteria

Diseases caused by parasitic animals—

Malarial fever, sleeping sickness, relapsing fever, pebrine, Texas cattle fever, hook worm disease, trench fever and lice (cooties)

Diseases caused by parasitic plants—

Diphtheria, tuberculosis, plague, tetanus, small pox

Preventing germ disease—

Sanitary considerations—hookworm as illustration

Cleanliness in the home—Cooper's report on school room construction

Light, ventilation, vacuum cleaning, oil mops, oil dusters, disposal of wastes, garbage typhoid and sewage. Elaborate.

Clean streets

Sanitary markets

Food in transit—meat, milk, fruit, vegetables

Get Lunt's statistics on vegetables

Quarantining

Disinfection

Pasteurization

War on rats, flies, etc.

Combatting germ diseases

Natural immunity as a prevention of disease

Care of wounds

Vaccination

Inneculation

Types of influenza

Immunity and its significance

Typhoid-army records

Economic relations of plants and animals to man

Summarize above economic relations from different points of view

What is meant by economic relations?

Microscopic organisms beneficial to man

Agriculture, soils, leather.

Introduce photographs and brief discussion of crown gall, strawberry wilt, etc.

Organisms of decay

Organisms concerned in butter and cheese-making

Organisms concerned in bread making

Organisms concerned in enriching the soil

Organisms harmful to man

Disease-causing organisms (see above)

Those causing decay of foods, blights, etc.

Algæ beneficial to man

Sources of supply of K. & P. used in fertilizer.

Algæ—harmful

Water supply

Fungi—a group of dependent plants

Lichen as soil formers and as food

Mosses as soil formers, and other uses—sphagnum and surgery

Ferns

Farm crops and garden products

Plants and the industries

Linen, paper, cotton goods, fats and oils, alcohol, turpentine, tar, furniture, machinery, etc.

Plants and soil formation

Aesthetic value of plants

Forestry

Weeds

Sponges and sponge "fishing," Carribean coast—See Shellfish Industries (Book)

Industries due to molluscs—

Oysters, pearls, mother-of-pearl, clams, etc.

Beneficial and harmful worms—

Earth worm, tape worm, flukes, trichina

Beneficial insects—

Silkworm, honey bee, lady beetle, ground beetle, spiders, "Harvestmen" bumble bee

Harmful insects—

Insects affecting the household

Cock roaches, bed bugs, house flies, carpet beetles, carpet moths, clothes moths, etc.

Insects affecting domestic animals,

Bot flies, black flies, mosquitoes, warble flies

Insects affecting shade trees

Tent caterpillar, gipsy moth, tussock moths, the elm lead beetle, locust borers, etc

Insects affecting gardens and farm crops

Cut worms, plant lice, army-worms, potato beetles, cabbage worms, chinch bugs, Hessian fly, etc.

Fish and fish industries

Amphibians and reptiles

Birds

Harmful birds

Cooper hawk, sharp-shinned hawk, English sparrow, long-eared owl

Beneficial birds

Birds as insect destroyers

Birds as scavengers

Industrial aspects of bird life

Food, eggs, feathers, guano, fertilizer

Food charts, studies of specific cases of bird food

Mammals—the common and native mammals

Meat, leather, furs, hair, milk and butter, cheese, wool

III. *Improvement of Plants and Animals*

Nature's way of changing plants and animals

Overproduction

Variation

Natural selection

Survival of the fittest

Protective coloration, mimicry, protective resemblance, warning colors.

Mutation

Man's way of plant and animal improvement**Plant improvement**

Life cycle of a seed plant

Improvement of the seed

Special consideration of corn, wheat, sugar beet, apple

Propagation of desired types by other methods

Grafting and budding, bulbs, tubers, roots, stems, stolons

Types of animals produced by man

Horses, sheep, hogs, chickens, pigeons

Improvement of the human individual**Physical improvement**

Work. Care of eyes, teeth, etc.

Mental improvement

Heredity vs. education

IV. *Plant Groups—Outline—Use a few types*V. *Animal Groups—Outline—Use a few types***Type Courses in High School Botany Outlined by
Dr. Bradley M. Davis*****Outline Number 1***

1. Gross morphology of any common plant.
2. Rapid survey of the chief groups of the plant kingdom to develop the idea of classification. Gather types in the school garden or vicinity, or have types growing in the laboratory. Division, class, order, family, genus and species.
3. Comparative study of bean and corn. Plants, seeds and seedlings. Life cycle.
4. Study of protoplasm in plant and animal cell. Spirogyra, Amœba, Elodea, onion skin or other simple tissue.
5. Careful study of the morphology and physiology of a seed plant. Emphasize the relations between structure and function.
6. The leaf. Activities discovered by experiment, structure then studied.
7. The root. Structure and function, osmosis, capillary action, root pressure, relation to soil. Conditions necessary for health, air, water, physical conditions of soil.
8. Stems. Types and function, some study of comparative structure.
9. Buds. Structure and functions.
10. Flowers. Study of a few available types. Adaptations, pollination.
11. Fruits. Principal forms, structure and development, food relations.
12. Seeds. Types of structure, food storage.
13. Seedlings. History and conditions of development.
14. Reproduction. General considerations based on material studied. Sexual methods compared with sexual reproduction.
15. Plant breeding. Methods employed and results of economic value.
16. The weed problem. The struggle for existence, variation, survival, adaptations. Principles of organic evolution.
17. Plants of economic value. Emphasize the dependence of animal and human life upon plants, the dependence of the city upon the country.

18. Bacteria and other fungi. Study of the structure and life habits of a few forms. Relations to decay, the soil, animal and plant diseases.

19. Work of state and federal departments of agriculture.

20. Type studies to illustrate plant evolution if the length of course permits.

21. Plant communities. Field studies if time permits and if seasons and school conditions render practicable.

Outline Number 2

A year's course, seven periods a week, primarily for first or second year high school pupils, but sometimes adapted to other years.

1. Problems in water relations of plants. *a.* Evaporation from plants. *b.* Transfer of water and the structures involved; stem structure and characteristics of woody stems. *c.* Absorption of water; root structure; osmosis.

2. Problems in nutrition. *a.* Carbohydrate manufacture, and the anatomy of the leaf. *b.* Leaf arrangement as related to photosynthesis. *c.* Independent plants. *d.* Saprophytes and parasites. *e.* Use made of elaborated food; digestion, transference, storage, assimilation.

3. Problems of growth, propagation, and reproduction. *A.* Opening of bud and growth of shoot. *b.* Structure of buds. *c.* Utilization of stored food. *d.* Growth from tubers, bulbs, etc. *e.* Stolons, runners, root sprouts. *f.* Leaf cuttings, soft wood and hard wood cuttings. *g.* Flower and seed; pollination, fertilization.

4. Dispersal and germination of seeds. *a.* Methods of dispersal; field and laboratory study of effectiveness of devices. *b.* Growth from seeds. *c.* Structure of seeds.

5. Response to environment. *a.* Response to temperature, gravity, light, touch. *b.* Competition between plants and between branches on the same plant. *c.* Healing of wounds; callous formation; tree trimming. *d.* Transplanting.

6. Dependent plants, social and economic problems. *a.* Bacteria; relation to decay and disease. *b.* Yeast; physiology and morphology. *c.* Molds, growth, distribution and structure. *d.* Parasitic fungi and plant diseases. *e.* Mushrooms. *f.* Wood-rotting fungi.

7. The principal groups of independent plants. *a.* Algæ; vegetative structure, manner of life, reproduction. *b.* Mosses; vegetative structure, the problems of water supply and nutrition, gross anatomy of reproduction. *c.* Ferns; vegetative structure, the problems of water supply and nutrition, sexual reproduction. *d.* Gymnosperms; vegetative structure, water supply and nutrition, gross morphology of reproduction. *e.* Angiosperms; review vegetative structure and methods of water supply and nutrition; study flowers and seeds as supplementary to earlier study of same subjects on account of greater seasonal abundance of material.

8. Problems of industries founded upon plant activities. *a.* Plant breeding problems. *b.* Soil and its problems. *c.* Weeds and the problems of weed control. Much discussion of the relations of plants to industries and particularly to agriculture is involved in earlier parts of the course. Only problems requiring additional separate treatment appear here.

9. Plant geography. *a.* Local problems. *b.* Regional distribution. The amount of attention given to this section must vary widely, due to differences in local problems, age and grade of class, amount of time available, school program and library equipment. They cannot be outlined in advance.

"The course is administered with the knowledge that only a negligible minority of those who take botany in a public high school will ever study it in college. It is organized fundamentally about the life of the plant and the prob-

lems of social significance involving plants. Function precedes structure in order of presentation, but structures are studied when, and so far as, desirable in order to understand the work of plants and their relations to human welfare.

"With a class of very immature pupils, as an exclusively ninth grade class, many of the topics must be somewhat simplified. This is particularly true of Section 7. On the other hand, if the class is made up largely of third and fourth year pupils this section may be considerably amplified."

Author of a Proposed Biology Course—Chicago

Report of Biology Teachers of Chicago on Recommendations for a New Course of Study for the High Schools of Chicago

Recognizing the sound pedagogical principles set forth in the pamphlet, *Cardinal Principles of Education*, by the National Committee on Reorganization, we desire to base our recommendations upon the definition of education, which is stated therein as follows:

"Education in a democracy, both within and without the school, should develop within each individual the knowledge, interests, ideals, habits and powers whereby he will find his place and use that place to shape both himself and society toward ever nobler ends."

We hold that biology is unique among secondary school subjects, when properly taught, in serving a greater number of the ends of education than any other single subject, and that it should furnish a part of the training of every boy and every girl who is to contribute to the depth and breadth of the democracy in which each is later to take an active part. In support of the contention just stated, we desire to show in concrete form the extent to which biological training contributes to the seven main objectives of education.

I. *Health—*

1. Relations of other organisms to man a basis for successful preventive medicine.
 - a. Bacteria, beneficial and injurious.
 - b. Insects and disease.
 - c. Animal parasites.
 - d. Rats and bubonic plague.
2. Knowledge of plant and animal requirements leads to, a better understanding of human requirements.
 - a. Food.
 - b. Air.
 - c. Water.
 - d. Elimination of wastes.
3. Knowledge of conditions for proper metabolism in plants and animals makes clear the importance of
 - a. Physical exercise.
 - b. Bodily cleanliness.
 - c. Civic hygiene.

11. *Command of fundamental processes.*

1. Closer coordination of English and natural science studies would secure
 - a. Definite expression of original thought.
 - b. Language as an art.
 - c. A saving of needless duplication of effort.
2. Enthusiasm resulting from a stimulation of a natural interest in living things results in a spontaneity of expression—an end of effective English teaching.

III. *Worthy home membership.*

1. The biological sciences teach, as no other subject can, fundamental knowledge and relationships of sex.
 - a. Home and family the ideal fundamental unit.
 - b. Educate for fatherhood and motherhood.
 - c. The approach being natural and biological, a wholesome attitude toward sex and reproduction is secured in mixed classes without offense.
 - d. Facts of sex and reproduction considered a normal part of knowledge.
 - e. Biology teachers have gone beyond the experimental stage in teaching sex and reproduction. It is being done, but all pupils in the high school should receive this instruction.
2. Food values and clothing values should be studied by boys as well as by girls.
 - a. Plant and animal foods.
 - (1) Luxuries.
 - (2) Economical selection.
 - (3) Vitamins.
 - b. Wool and other animal materials.
 - c. Cotton and other plant materials.

IV. *Vocation.*

1. Biological sciences prevocational.
 - a. Agriculture.
 - b. Dentistry.
 - c. Medicine.
 - d. Nursing.
 - e. Housekeeping.
 - f. Horticulture.
 - g. Forestry.
 - h. Art.
 - i. Pharmacy.
2. Biology will help a pupil to select a vocation. A year of biological science will furnish a strong indication as to whether one of the vocations of the list should be selected or avoided.

V. *Citizenship.*

1. "Civic biology consists in that group of problems in the control of living nature to solve which requires that a community unite in working together intelligently, such problems must be made the vital part of the education of every citizen for in no other way can they ever be solved.
 - a. Flies and mosquitoes, allowed to breed on one's premises, may prove a menace to neighbors.
 - b. Scale insects and weeds are no respectors of fences.
 - c. Each individual's carelessness or ignorance affects others. The fact that some people allow the brown rat to breed costs the country \$500,000,000 each year.
 - d. Protection of birds, a civic duty.
 - e. Biological information presses duties of citizen as neighbor, voter, taxpayer.
 - f. Cooperation necessary to help control balance of life.
2. "The problem of civic biology is to make it possible for everyone to know what these forces are, for good or for ill, and to understand how to do his part for his own good and for the good of the community."

VI. *Worthy use of leisure.*

1. Forms or helps to form lifelong interests leading to active outdoor versions.
 - a. Bird study.
 - b. Flower culture and flower and other plant study.
 - c. Insect collecting and insect study.
 - d. Fishing and hunting.
 - e. Excursions at home and abroad.
 - f. Poultry keeping.
 - g. Bee keeping.
 - h. Gardening.
2. Cultivates a love for beauty, a basis of art.

VII. *Ethical character.*

1. Tends to secure cooperative good will.
 - a. "Cultivates intellectual honesty,—an outgrowth of experience with facts which begets faith in the order of nature and in the workings of its laws and the will to order one's life in accordance with them."
 - b. Combats evil by substituting knowledge for ignorance.
 - c. Cultivates regard for laws and ordinances by making biological facts upon which laws are based common property of the community. Temperance laws came through the education of the public.
 - d. Positive effort for good rather than repression.
 - e. Making the world a better place in which to live is distinctly ethical.
 - f. The producer is on the side of law and order.
2. "If boys of a neighborhood make raising of peaches and grapes impossible, a better remedy than the jail is to start them to raising peaches and grapes of their own."

As biology teachers we are inclined to prefer pupils for our classes who make free choice of our subjects; however, realizing the extent to which biology contributes to the wealth of the people and to the health, efficient living and enjoyment of life of the individual, we desire to recommend that all pupils be required to take a year of a biological science in the second year of the course.

In the discussion which followed, it developed that not much has been done in Illinois High Schools along the lines suggested by Dr. Caldwell, namely, the working out of a high school science course consisting of two years of compulsory science (general science, followed by a year of biology) with two years of physical science following, but optional. Agriculture and other practical applications of scientific knowledge are crowding out the biological sciences. Dr. Downing stated that data in his possession showed a decline in the number of students studying science in Illinois in all subjects except agriculture.

At the afternoon session, H. A. Hollister, High School Visitor for the University of Illinois, gave a paper on Classroom Periods and Methods of Instruction in High School Biology from which all present got a new inspiration. The paper follows:

Classroom Periods and Methods of Instruction in High School Biology

H. A. Hollister

In order to discuss intelligently such a topic as this we must have a point of view, that is, we should consider it with reference to certain definite aims in high school teaching of biology. What is it that we desire to accomplish by the teaching of botany, zoology or physiology to pupils of high school grade? Further, what may we safely predicate as to the previous preparation of our pupils for such work? Alas for the latter condition to our problem, we may safely assume that we are to deal with virgin soil!

But the first of these questions, the "why" of our teaching, we must have pretty definitely in mind. Is it not this? That we wish to acquaint the pupils with life phenomena within and about them; and this we wish to do in such a way that they may think intelligently as to the essential life processes in their own bodies and of the relation of other life forms to their health or in their social and economic aspects. Incidentally let us say, we seek in this teaching to engender habits of careful observation, comparison and analysis such as will enable the individual later to satisfactorily complete his adjustments to the life side of his environment. In other words, we hope, by this educative process, to give to the individual a rational view of the fundamental functions of all life, together with such habits as shall enable him to take the initiative in solving his own specific problems as they later present themselves.

This is no time for research work. That belongs to a later period. At the same time the habits we develop of careful observation, of accurate description, and of logical analysis will function to great advantage for those who seek the pioneer fields of biological truth. This amounts to saying that whatever we do will be best done if so conducted as to establish such habits. Or if we have in mind the later study of crop production, horticulture, physical education and hygiene, or household economics, the habits thus formed and the information thus placed at command of the individual will serve as the best possible preliminary or preparatory step in either of these special fields where biological facts and principles are involved.

Along with the aims in teaching biology we must take into consideration the means at hand or obtainable for the attainment of the objectives set up. First of all there is nature in the large,—in field and forest and stream and pool, and in the air we breathe. To interpret life as it appears thus in its native haunts and with its varied associations so intimately related to its functioning and its propagation is the chief asset where natural conditions are available. Then there is the laboratory, with its microscopes and projectoscopes, its dissecting instruments, its preserved materials and slides, its aquaria, its germinating boxes; perhaps, also, its botanical conservatory,—all useful in their way when placed at the command of a teacher who knows what the objective is and how to attain it.

But there are essential limitations as to means; and the aims in view are not always clearly seen and comprehended. One teacher will "give a course" in biology; another will undertake to develop in the pupils those habits and that understanding involved in attaining the ends of biology teaching. There is a vast difference. The one follows the text or the convenient outline; and as for laboratory notes, will prefer the note book, with the forms all printed and only the brief spaces to be filled with a descriptive word or with numerical data. What a pity that some one does not work into one of these "ready-to-wear" note books skeleton outlines of all drawings to be made with suggestions as to color effects to be worked in!

The real teacher carefully selects references to the text and to other sources of descriptive material; considers carefully just what work afield or in the indoor

laboratory will be needed to round out the pupils' comprehension and to count towards fixing an essential habit;—all this with the definite aim in view of organizing into the mind and experience of the pupil some elements necessary for his adjustment to his biological environment.

Thus the proper teaching of biology involves varied elements as to material equipment. If, as in some city schools, field work is difficult or out of the question, then the equipment should stress the lantern work with microscopic projection as well as comprehensive views. The naturalist photographer is doing wonderful things along this latter line of illustrative work. And now the cinema is coming to our aid with all its possibilities of life in motion. In such situations, also, greater emphasis should be placed on the aquarium and conservatory where actual living things may become the daily contemplation of the pupils.

And what has the classroom period to do with all this? It is the time allowed to the teacher in which to direct the work of the pupils. If they are rightly taught this time will be used for inquiring as to the difficulties the members of the class have encountered in library, field or laboratory; for helping the pupils, through skillful questioning and comment, to organize and assimilate whatever is new in their experience; and especially for giving directions as to the work to be done next.

There arises here the debated question as to the double laboratory period. Two reasons have been given for this: First, in order to make the pupils' day's work equal to a recitation following the preparation of an assigned lesson. Second, to give sufficient time for the accomplishment of a particular problem and the making of a proper record of results. As a matter of fact much that is considered laboratory work might well be preceded by definite study in preparation for it. This is peculiarly true where laboratory work is to be done afield.

In all this there should be considerable freedom on the part of the teacher. With a thorough understanding of aims and a mastery of materials and conditions essential to their realization, the teacher should not feel hampered by any insistence upon a literal interpretation of the laboratory period required.

Finally, let me say that classroom periods, material equipment, textbooks, laboratory periods, all have significance in proportion to the successful adaptation of them to the attainment of clearly defined aims on the part of the teacher.

Harry A. Cunningham, Paxton High School, gave the results of a very instructive experiment which he had conducted to determine the relative value of the lecture method and the individual method in presenting laboratory exercises in biology, as follows:

Individual Laboratory Work Versus Lecture Demonstration

Harry A. Cunningham, Paxton High School

Does the individual experience of a pupil in laboratory work pay for the extra time and trouble, or will as good results be achieved more economically from the lecture demonstration method, or will better results be achieved by individual laboratory work under some conditions and by the lecture demonstration method under other conditions? This is a problem that is being much discussed by high school science people at the present time. At the High School Conference one year ago this problem was considered. But, if I remember correctly, very few in the biology section seemed to have grasped the idea that the results from such instruction can be objectively measured, and that it is the duty of science men, not to meet year after year and exchange their opinions on such matters, but to help formulate a constructive program whereby the

relative merits of the two methods of instruction, as well as other similar problems of the pedagogy of science, can be objectively determined. In the solution of these problems, the cry, on the one hand, must be for less and less of mere personal opinion which, at its best, is bound to be partial, subjective, inaccurate, and incapable of being "verified or intelligently criticized"; and for judgments "more impartial, more objective, more precise," and "more subject of verification by any competent observer." It was with the idea of making a small start in the right direction that this study was made.

Thirteen experiments were given to twenty-five sophomores in high school botany. My first problem was to subdivide the pupils so as to make the two classes as nearly as possible equal in ability. This was done after a consideration of the school grades made thus far in their high school course and of the results secured through the use of the Chicago Group Intelligence Test. Each experiment was given to one section as a lecture demonstration and to the other as individual laboratory work.

The exercises given might be roughly divided into three general classes; (1) those in which we are trying to clarify the child's concepts and give him new concepts through observation but in which no problem arises and no reasoning to conclusions is necessary; (2) those which give rise to a problem the explanation of which depends upon knowledge which the pupil does not possess and which is furnished him; and (3) those exercises in which the student must not only observe but must reason to his correct conclusions unaided.

Each exercise, except those in which no reasoning was necessary, was written up under three heads: (1) "what was done"; (2) "what happened"; and (3) an "explanation of why it happened."

On ten of the exercises, each student was timed from the time he began the exercise until his paper was ready to be handed to the instructor and the time, in minutes, required to complete the work was marked on every paper.

In scoring, a list of all the different points made by all the students under the three divisions: "what was done, what happened," and "why it happened," was made and then each individual student was scored in each of the three divisions, and upon the experiment as a whole, on the basis of this list. For example, in the test for protein, the total number of points made by all the students under the "what was done" division was twelve. If one individual student made six points, he made fifty per cent of the total number of points under that division. If the total number of different points scored by all the students on one exercise was twenty-one and some individual student made a score of seventeen points, he made eighty-one per cent of the total number of points.

Turning to a brief consideration of results, we may note, in the first place, that the individual workers always slowed down when they came to a very complicated experiment and when the method of work was very different from what they had experienced before. In the very interesting exercises, such as the one on Air Pressure, they also slowed down because of the great interest they took at each step in the experiment. In only one exercise did the individual workers make better time, and these results were due to different methods of making the observations. As a whole, from the point of view of the economy of time, the results were very emphatically in favor of the lecture demonstration method. The average time required under this method for one exercise was thirty minutes, and, in the individual work, the average time per exercise was 42.2 minutes; showing that an exercise, on the average, was done in twelve minutes less time and that the entire ten exercises, on which time was taken, were done in two hours and two minutes less time by the lecture demonstration method than by individual work. From these results, therefore, we may conclude that, in most cases, laboratory work may be done in less time by the lecture demonstration method.

We shall now take up a brief discussion of the results obtained under each of the three divisions; "what was done, what happened," and an "explanation of why it happened," and then consider the final scores.

Under the "what was done" division, we have the following conclusions: (1) pupils can get what was done in a difficult method of procedure as well or better by doing individual laboratory work; (2) the individual workers did not take very careful note of what was done in experiments whose methods of procedure were too common to draw their attention sufficiently to enable them to fix each step of the procedure in mind.

Under the "what happened" division, we found: (1) Experiments that must be started before the regular period or which must be continued after the class hour, give, as a rule, practically the same results by both methods; (2) In an experiment that must run from day to day, such as the one on osmosis, the pupils will take more interest in making the observations if they have been active agents in setting up the experiment and will therefore, give better results in the "what happened" division; (3) If the exact results of an experiment are difficult to obtain, such as the color tests for food, the individual workers will make a lower score in this division, because many of the pupils will not get the exact results.

The results obtained under the "explanation" division may well be considered the most important of all and were as follows: (1) Experiments that involve familiar apparatus and easy methods of procedure may secure as good or superior results by the individual laboratory work as by the lecture demonstration method; because the student's mind is sufficiently free in such cases from the details of the procedure to enable him to consider the results and their explanation more carefully as he proceeds with the steps of the experiment; (2) As the complexity of the apparatus and the difficulty of the method of procedure increases, less and less valuable results are secured in the explanation through the individual work, owing to the discouragement and distractions which the pupils encounter; (3) Those getting the work as a lecture demonstration made seven per cent higher average in the "explanation" division, than those doing individual laboratory work.

Summing up our results, we may say:

(1) In experiments involving observation only, as good or better results can be obtained by individual laboratory work.

(2) In experiments where the student must reason to his conclusions, as good results may be obtained under the individual laboratory method, only, if the apparatus is fairly familiar and the method of experimentation extremely easy.

(3) The drain upon the students' attention to so many details in a difficult method of procedure seems to cause them to miss the main point of the exercise in many cases, and thus give much poorer total results under the individual laboratory method.

(4) The lecture demonstration people made a final average, upon all the experiments, that was 5% higher than the final average of those doing individual laboratory work.

(5) In practically every case time and trouble can be saved by the use of the lecture demonstration method.

It will be noted that these results were obtained immediately after the experiments were performed. They need to be tested out still farther. It still remains to be seen which method will give results that will be retained for the longer period of time. The results from the limited experimentation of the speaker along this line indicate that such a study might not give data so emphatically in favor of the lecture demonstration method of instruction. If such should turn out to be the case, it will then remain to be determined whether,

in the end, individual laboratory work will be better or whether the better immediate results from the lecture demonstration method of instruction can be retained by a better technique of class room instruction.

It is realized that this is only a very small step in the needed investigation. Exercises of distinctly different types need to be tried out extensively. We believe that there are great possibilities in differentiating science learning into several distinct and separate types, such as: those involving observation, discrimination, formation of hypotheses, reasoning, and the formation of judgments and generalizations. Exercises should be devised for each of these and the best method of presenting each type should be objectively determined. The particular sense, muscular or thermal, visual or auditory, through which new concepts are gained should be considered. The relative value of drawings and written descriptions should be studied.

So we see that there are many problems yet to be solved. Most problems, in fact, in connection with the pedagogy of science are yet to be solved. It becomes the duty, in the first place, therefore, of every live science teacher to get a problem, solve it, and get a judgment upon that particular problem that is "more impartial, more objective, more precise," and more subject to verification by any competent observer," than has been obtained by any one else. And if we follow such a course, we shall become better teachers because, as we proceed, we shall be constantly recognizing more of our teaching problems and solving them as never before. This will give us, as teachers, a greater self respect, because we shall have a consciousness that upon one particular point at least we have found out something that nobody else knows.

In the second place, let us be willing to cooperate in any constructive program that may be adopted for the purpose of solving our teaching problems in a large way.

If every science teacher will get this spirit, we shall in a surprisingly short time, in the pedagogy of science, substitute "evidence for opinion and knowledge for speculation."

The discussion which followed Mr. Cunningham's paper proved that the results of concrete experiments with a particular problem are of much interest.

Elliott R. Downing, Department of Natural Science of the School of Education, University of Chicago, gave the results of some new tests for determining various phases of biology training in several grades. He discussed the topic, Educational Tests in High School Biology, giving results obtained from such cases in two high schools. The tests have not been carried far enough to show definite results. Mimeograph copies of several outlines for tests were distributed.

The first of these was a "Range of Information Test." This consisted of a list of fifty technical words and phrases used in the various fields of elementary science. The pupil was requested to place an E beside words and phrases he could explain or define; an F beside those he had heard or read about, the meaning of which is not clear; and an N beside those that were new.

The second was a "Completion Test," requiring the insertion of suitable words in the blank spaces.

The third was an Alternative test, and the fourth a leaf test requiring a knowledge of the leaf forms of several typical trees. A fifth test was a test in understanding of the principle of levers.

An interesting discussion followed Dr. Downing's presentation of the subject and the chairman was directed to appoint a committee to encourage and collect data concerning the results of tests and biological projects in Illinois High Schools. This committee will report at next year's meeting.

Mr. R. H. Linkens of Normal University was elected as a member of the executive committee for three years.

CLARENCE BONNELL, *Secretary*.

4. CLASSICS SECTION

The Classics Section of the Conference was held in the University Place Christian Church with Professor W. A. Oldfather presiding.

The morning session opened with a paper presented by Principal C. H. Kingman of Ottawa on Objectives as a Basis for Curriculum Reconstruction, a synopsis of which follows.

Objectives as a Basis for Curriculum Reconstruction

By Charles H. Kingman

(Synopsis of address to Classical Section of the High School Conference November 19, 1920.)

There is no topic which is receiving more attention among educators today than this vital matter of curriculum reconstruction. The teaching profession calls for large expenditure of time and strength, and too often the daily routine demands are so heavy that neither time nor energy are left for obtaining a proper survey of our work. I am sure there is no class of people who toil more industriously or more conscientiously than our teachers. I am fully persuaded also that there is no profession which makes so few vital mistakes. But having thus complimented ourselves, since there are so few to perform that office for us, I wish you to ascend with me from the valley of our daily routine, to a hill of vantage whence we may survey our course, and plan for tomorrow's journey.

Day by day we have gone on teaching algebra and Latin and manual training, perhaps without once stopping to ask what it is all for. What are we trying to do, anyway? What is the purpose of this thing which we call education? Apparently from the very earliest times educational philosophers have struggled with this problem of objectives. The pages of pedagogical books are not lacking in definitions, but alas, too often their vague and general character makes them seem very much like sounding brass and tinkling cymbals. For example, Froebel tells us that "the object of education is the realization of a faithful, pure, inviolate, and hence holy life." But this utterance gives little help to one seeking to know the proper amount of emphasis to be placed upon ancient history in the modern curriculum. Another has written, "Education is the process by which the individual man elevates himself to the species." Whatever this may mean it certainly lends little comfort to the program builder desiring to know whether algebra and geometry should be required of all. We step upon more solid ground when we take Dr. Bagley's dictum that "Education may be tentatively defined as the process by means of which the individual acquires experiences that will function in rendering more efficient his future action." Dr. Briggs of Columbia seems to me to give us the most helpful advice

in reminding us that "The purpose of secondary education is to prepare boys and girls to do better the things they would do anyway; and to reveal to them higher forms of activity, and to make these possible for them in so far as we are able." I suppose that every parent sends his son to school very largely upon the theory that he will improve his son's chances for making his way successfully in the world. On the other hand, free public education aims not to the success of any individuals, but to the welfare of the social whole. The school, however, has the double duty of doing its best for each individual, and at the same time it must work for the best interests of the state taken as a whole. Fortunately the coefficient of correlation between these two ideas is rather high.

There are many troublesome questions arising in regard to our high school curriculum offerings. Only yesterday Greek and Latin and mathematics were required of all who would make any claim to the title "educated." But today Greek has been discarded almost entirely; the study of Latin has certainly been very materially reduced, and history and mathematics are coming more and more to be considered variables. Wood turning, Spanish, community civics, cooking, sewing, gas engine construction, automobile repairing, swimming—such are the studies and activities now listed in our high school catalogs. Countless other lines of work are clamoring for admission. It has now become a most acute question as to what time honored studies shall be retained and emphasized, what ones are no longer essential, and out of the many new things to decide which are worthy and within our possibilities. The condition of education can never be static. Changing social conditions will always make it imperative that educational effort adjust itself to the varying life of the people. Different social groups will have their particular needs. The same curriculum offerings will not suffice for all classes.

Very often the question of what courses shall be offered, and what courses required, is of less importance than the question of what shall be emphasized within a given course. For example, I suppose no schoolmaster would be so "advanced" as to recommend discontinuing the study of arithmetic, yet within the past few years we have witnessed a common sense reconstruction of courses in arithmetic. By common consent little or no energy is wasted on such topics as cube and square root, partial payments, etc. For you Latin teachers it will be more and more a question of emphasis in your courses.

We cannot hope to make much headway in scientific curriculum reconstruction until we have charted our course, and have established some principles of guidance. The captain of an ocean liner who should leave his pier with no knowledge of the port he expected to make, or without charts to guide his voyage would be an object of ridicule. When our profession shall have decided upon the real objectives which we wish to attain we shall have accomplished much. Committees of the N. E. A. and our conference have made reports on the matter of objectives.

I am going to call your attention briefly to the report submitted by the N. E. A. committee. It represents the work of three years, and I think embraces all objectives that I have heard mentioned. Mr. Kingsley and his committee tell us that there are seven great objectives, as follows: (1) health, (2) the fundamental processes, (3) worthy home membership, (4) vocation, (5) good citizenship, (6) worthy use of leisure, and (7) ethical character. The more you think about them the more they will grow in importance. They give evidence of unusual breadth of vision and keenness in analysis.

Everyone desires good health, yet few are willing to pay the price in necessary self denial to obtain it. Is there not an excellent chance for our teachers of the classics to emphasize the great value which the ancients placed upon physical perfection? Our own conference committee has pointed out that in 1914 the city of New York expended less than one tenth of one per cent of the money raised for educational purposes in the promotion of good health.

The war showed us many weaknesses in our affairs, but it pointed to nothing more clearly than our need of an active, sane, and persistent good health program. It is of little practical worth to know about the physical perfection of the Greeks if we ourselves are stumbling along with all manner of bodily defects and weaknesses. Many of our students learn in ancient history or in the original classic writings about the ancient glory of games. Yet they themselves do all within their power to get excused from all such present day activity. I believe this classical section has an opportunity to do as much or more than any other section in this conference toward the realization of this first objective.

The second objective is the mastery of the fundamental processes. Probably this will appeal to you as being a matter more properly within the sphere of the grade school, yet all of us know what a large percentage of students come to us, and even are graduated out from our midst, with a more or less shaky foundation in the fundamental processes of reading, writing and arithmetic, etc. When such unfortunates are found in the high school the sensible thing is to set about remedying the trouble right there, in so far as we can. In this work the classical teachers and all other departments must cooperate.

Our third objective is worthy home membership. The factory system was both a blessing and a detriment to the home. It took out of the home the muss and tedium and transferred them to the shop and factory, but it also shortened the waking hours when the members of the home are together in the home. What subjects tend toward worthy home membership? Surely household arts and home economics, and in a large degree manual training. In our school a trained nurse gives daily instruction in "home care, nursing, and hygiene." The sorrows following in the wake of divorces, laxness of morals, and any other evils that threaten the solidarity of home and family life should be fully exposed.

The fourth objective is vocational education. The days of free land and easy acquisition of a good living are gone. Our country, through increased population, will more and more approach the condition arrived at in European countries long ago. Each individual must be trained to do something that will earn him a living. Classes in vocational guidance will doubtless help the young and thoughtless to decide upon their life work. Comparatively few deliberately choose their work; the greater number drift into chance jobs. Every teacher in every subject should remember this objective, and lose no opportunity for making it effective.

Civic education comes next. Here the classical teachers have a fine opportunity to compare present institutions with those of Greece and Rome. Some one has said that man toils upward from the fenlands of barbarity and crudeness to the heights of civilization only to be plunged down again to the place whence he came. The elements of strength and the dangerous weaknesses of Greece and Rome are fruitful sources for comparison and study today.

Worthy use of leisure! Shorter working days have given us greater leisure. What shall be done with it? The dances, the movies, the merry-go-rounds, the various species of buffoonery all make their claims. What shall constitute worthiness? It seems to me that Cicero long ago gave us an answer to this question when he said that man should be able to find within his own heart and mind and resources the necessary elements for the enjoyment of leisure hours. Literature, music, art, athletics, all these he may summon if he is truly educated. We shall really have done a great thing for our young people if we can teach them to be independent of the garish passing show for the enjoyment of leisure. Few there seem to be among them who are capable of finding enjoyment and happiness within themselves.

Then finally, ethical character. It would ill pay the state to educate rascals. An ignorant fellow of evil inclinations may be a thug or a foot pad, but an educated criminal might become a dangerous enemy to countless numbers.

In Greek and Roman literature we find a storehouse of character studies. The skillful teacher can make them living men and women whose careers may be studied and compared, to the advantage of our students. School should not be merely a preparation for life, for it is a part of life itself. If every teacher could teach in every recitation unit with a definite, specific, and worthy purpose in mind, and with these definite objectives in view how different the results of our work might be.

The section was then divided into three divisions for the remainder of the morning. Of these divisions, the first, on The Vitalization of Latin, was presided over by Professor H. J. Barton. The leader was Miss Laura B. Woodruff of Oak Park High School, who, in directing the discussion, emphasized the following facts:

There are many means available for imparting vitality to our work, but the one indispensable means is the vitality of the teacher herself. To secure such vitality three things are necessary:

1. Knowledge of the subjects we are teaching, for without knowledge, we lack confidence in ourselves and fail to inspire confidence in others;
2. Faith in our subject, for without faith, we become discouraged and pessimistic, our interest lags and our efforts weaken;
3. Power of human understanding, for without this we cannot hope to interpret our subject in terms that will stimulate the minds of the young people in our classes.

To a teacher possessing such vitality as this, other means of vitalization become ready tools of service to be used when occasion requires, but not to be over-emphasized and not to be relied upon as the only way to create interest in the subject.

The use of stereopticon slides, photographs, prints of various kinds, models, illustrative material in general, games, perception cards, plays, and the different activities of a Latin Club were discussed, and it was agreed that all such things are good if wisely incorporated into the work, but the main source of inspiration even in these must come from the teacher.

The second division was called to order by Professor C. M. Moss and was in charge of Miss Helen A. Baldwin of the Normal School, Carbondale. Miss Baldwin's subject was Objectives for Each Year. The report given to the general session by the secretary of her section was very inadequate and altogether failed to do justice to the leader's efforts.

The third division, with Professor A. S. Pease presiding, was led by Miss Julia F. Evans of the Proviso Township High School, discussing the Latin Recitation in the Laboratory Method. Miss Evans' Paper follows:

The Latin Recitation in the Laboratory Method

In a small group like this, meeting together to discuss informally a topic in which we are all especially interested or we should not have chosen this section, by contributing the testimony of our teaching experience we may be able to arrive at some practical conclusion concerning the conduct of the Latin recitation in the laboratory method. Most of us feel that the laboratory method is an effort towards the solution of the problem of keeping the torch of academic

ambition burning in spite of the winds of other interests blowing cold upon it. Nor are these influences, in general, outside the school life. A radical change of objectives has taken place in the high school within the last ten years. Formerly regarded as a college preparatory school, it has itself become a melting-pot college. This is very clearly exemplified in an industrial community like mine where the high school pupils are divided into three classes: the college preparatory, the general cultural and the vocational. It has been my experience that the first group are satisfied with the minimum college requirement of two years, the third group take Latin to help them with stenography and the second often pursue the subject for the whole four years attracted by its general cultural value, realizing as they often do that the high school is their college. At present, the main objective of the high school seems to be, to graduate into the community desirable American citizens. Hence it has assumed the physical, social and vocational as well as the intellectual training of its students. This objective is very apparent in districts populated with many diverse foreign elements. Realizing the near futility of Americanizing the adult alien, we are concentrating upon his offspring in our schools. There is, then, a great difference between the objectives of the private prep school and the public high school.

Bearing this in mind, then, we have no right to complain that the numerous athletic and social activities keep students from studying their Latin in the good old way. We must, then, devise a method of teaching them with the minimum of outside preparation. To assign lessons which they will find no time to do is to create an impossible situation. The laboratory method seemed to offer a solution of the difficulty. As well as we could under a system of 50 minutes recitation periods, we experimented with it in our first year classes. Ordinarily, I believe it is used in conjunction with the supervised study system and 90 minute periods. Inasmuch as our time for recitation was so limited, the pupils were required to learn all forms and vocabularies outside of class. The translation exercises were taken as laboratory material, since they present the greatest difficulty and take the unsupervised student's major time. Our results were varied, as Caesar says. The difficulty of disposing of the quicker pupils arose; far ahead of the rest of the class, they either were idle or surreptitiously helping others. The slower pupils failed to gain speed. Their ambition was not aroused by the stimulus of comparison. They received no inspiring influence from their contemporaries. The formal recitation vanished. As each pupil paid attention only to the criticism of his own work, a good part of the teachers' time was wasted since the same correction was repeated very often. The spirit of wholesome competition was lost along with the formal recitation. The ear and the tongue were cheated of their training in mastering the new language. Inasmuch as the teacher instructed individually, she covered less ground than in the old way.

On the other hand, we had a more accurate estimate of the pupils' grasp of the subject. There was a comfortable visual assurance that they were all working and getting something for themselves. There was a partial solution of the problem of preparation.

The chief objections, then, in our case, were: the shortness of the time, the difference in pupils' speed, the loss of the group consciousness developed in the formal recitation. All of these have their remedies; for the first, a longer class period; for the second, segregation in large schools, perhaps in small schools excusing the swifter ones to do other work; and finally, a formal recitation when occasion arises, to impress upon the class as a whole the laboratory results on a definite topic. The idea of excusing the brighter pupil may shock the pedagogical mind, but usually he needs that time for some other subject in which he is not so proficient. Keeping them all back for the plodders was not so culpable as it sounds. We have placed our subnormals in one class, and those who were behind from other causes we kept after school to make up their work just as the science people do. At present, because of the limitations

imposed by the 45 minute period, we are combining laboratory and recitation methods. The first part of the period is occupied with explanations and explicit directions concerning the new forms to be learned outside, the forms assigned the previous day are then drilled upon, and the rest of the time is given to oral sight translation. Such a method is a feeble compromise and will be discarded as soon as we have a longer period to meet the requirements of a laboratory. Hampered and tentative, as my experiment was, it showed me a possible solution of the baffling problem of outside preparation. Furthermore, our former demands are not in accordance with the objectives of the institution in which we labor. Let us follow the current of popular educational demands and not wear ourselves out fighting our way upstream against an irresistible force.

So much discussion followed the paper that it was evident that many teachers are seeking a practical application of the laboratory method to the teaching of Latin as a solution of the problem of outside preparation. As the result of the discussion, Mr. Small, of New Trier, was appointed chairman of a committee to investigate the different forms of laboratory method at present used in Illinois for the teaching of Latin and to report the result of their investigations at the next Conference.

At the conclusion of these divisional meetings, luncheon was served by the ladies of the University Christian Church. From the large number attending and the words of appreciation, this social hour seems a happy innovation.

The afternoon session opened with the reports from the three divisions and then Principal George H. Rockwood of the Austin High School delivered a broad-minded and encouraging address on the Latin Situation from the Viewpoint of the Principal. Mr. Rockwood emphasized the point that, owing to the aim of our democratic system, to educate everybody, Latin is not for all pupils. He called attention to the fact that the actual number of Latin pupils is very large.

Following this address, Mr. C. W. Odell of the University of Illinois read a paper on Latin Tests, a subject which evidently was of great interest to the audience from the eagerness they evinced to examine his specimen tests and the inquiries they made as to where sets could be procured.

Latin Tests

C. W. Odell, University

You are all probably well aware that the teaching of the Classics in high school has been the subject of much attack recently. For this very reason I feel that we should take an unusual interest in the subject of Latin tests. Not only is Latin as a subject of the curriculum being attacked, but also our methods of teaching it and the content of the Latin course itself. The use of tests will not only materially assist us in meeting our opponents' objections to the teaching of Latin as a whole, but will be of much service in meeting attacks directed against the content and methods of the course. We cannot evaluate our methods or results unless we have some definite method of measurement. Standardized tests are not perfect; they do not measure everything, but they are rapidly

becoming better. While it is true that our tests in elementary subjects are, in general, better than those of high schools subjects, and that those of certain other high school subjects are probably better than those of Latin, yet the existing tests in Latin will measure certain elements of pupils' ability rather satisfactorily. Among these elements are ability in declension, conjugation, vocabulary, etc. It is true that such tests as we have in Latin do not measure appreciation, but it is impossible for the pupil to get any appreciation of Latin, or any other subject, unless he knows the fundamentals of the subject first. Moreover, our knowledge of the situation leads us to believe both that pupils who have greatest ability in learning the form side of the subject also are best in appreciation and that teachers who teach the form side most effectively are also the best teachers of appreciation. Hence it is probable that our best tests give us a fair measure of the whole situation in high school. However, in all our use of tests, let us recall one condition which is perhaps best expressed in the words of one of the leaders of the testing movement, "We must learn when we make use of tests not to throw away all our ordinary good sense."

Professor Hanus of Harvard as much as any one deserves credit in being the leader in the movement to standardize Latin tests. His article in the "School Review" for May, 1916, tells of the beginning of his work. He states that his purpose was to measure growth in vocabulary, translation and general ability. He devised the following tests: to measure vocabulary, four 50-word lists including words that occur at least 100 times in Caesar and Cicero; to measure translation, 10 sentences of varying difficulty, the most difficult being supposedly 3 times as difficult as the easiest and containing only constructions found at least 500 times in Caesar and Cicero; to measure grammar, 10 questions on the translation, 5 on nouns, and 5 on verbs. In the preliminary standardization of these tests, results from 358 pupils in 6 schools were used. In brief, the following results were obtained. They are expressed as class medians in per cents.

TABLE I

	Vocabulary Per cent	Translation Per cent	Grammar Per cent
Freshmen	61	45	60
Sophomores	76	67.5	77.5
Juniors	89.5	85	92.5
Seniors	91	82.5	85

The most noticeable thing about these results is that although the sophomores show a regular increase over the freshmen, and the juniors over the sophomores, the seniors' scores are, on the whole, below those of the juniors. Professor Hanus also compared the standing of pupils on each of the three tests. He found that pupils were likely to rank about the same, although such correlation was not at all perfect. This result agrees with the experience of most of us in the class room.

Another one of the first men to take up the Latin testing movement was Professor Starch of Wisconsin, a description of whose tests may be found in his volume entitled "Educational Measurements." If you are familiar with Professor Starch's work in the field of testing, you will know that much of it has been done rather hurriedly. This seems to be true of his Latin tests. The tests cover vocabulary and translation. The vocabulary is made up of 100 words selected at random—I believe the last on each sixth page—from Harper's Latin Dictionary. The list of Latin words is accompanied by a numbered list of the English meanings, and the pupil is to place the number of the correct meaning after each Latin word. This has at least two advantages: the pupil's speed of writing does not become a factor in the results and the scoring is rendered uniform. As you well know, the pupils, if left to give their own translation of Latin words, would give a great variety of English words, some of which would

be so nearly on the border-line between right and wrong that different teachers or other persons scoring the papers would not agree. Starch claims three advantages for his method of selecting the words; it gives a relative and uniform sample of the entire Latin vocabulary; the score has a meaning, and any number of additional lists of practically equal difficulty can be made. His translation test included 30 sentences chosen from various first year books, Caesar, Cicero, and Virgil, arranged in the supposed order of difficulty; the easiest of these sentences, "Amo"; the hardest, "Rex erat Aeneas nobis quo iustior alter, nec pietate fuit, nec bello maior et armis." The average scores upon his tests were as follows:

TABLE II

Scores	Freshmen	Sophomores	Juniors	Seniors
Vocabulary	18	24	30	36
Sentences	13	16	19	22

In these results you will notice that pupils show improvement through the whole high school course, seniors as well as others.

Professor Starch, with the assistance of Mr. Watters, later prepared other Latin tests. These include a vocabulary test somewhat similar to the first, but selected from Lodge's "Vocabulary of High School Latin," and sentences chosen from the work of each of the four years of high school Latin. These sentences are considerably longer than those of the first test.

A test of an entirely different kind has been used by Professor L. L. Lohr of North Carolina. A description of it may be found in the "High School Journal" for November and December, 1918. Professor Lohr calls his test "A Latin Form Test." He selected the 12 topics receiving most attention in some 16 first year books and the 50 most common vocabulary words distributed to represent the 12 topics in proportion to the amount of space devoted to these topics. By certain comparisons of topics such as, for instance, a certain voice and mood, or conjugation and tense, or perhaps a combination of several different topics, some eliminations were made. A study was made of the use of forms such as cases, declensions, persons, etc., in the three later years of high school Latin and this used as a guide to what forms to select for each topic. Thirty-five forms were finally selected, all of which represent two or more topics, for example, "videtur" could represent mood, voice, tense, etc. These thirty-five forms were placed in a column followed by other blank columns, the latter being headed "declension," "gender," "case," etc. In whichever of these columns applies to the word given, the pupil taking the test is to place an appropriate abbreviation to show its form.

Miss Wentworth of Los Angeles has devised still a different form of Latin test. Her tests are intended to secure a measure of the pupil's ability to recognize English words derived from the Latin. The tests are of two sorts. In the first kind there are 100 English words followed by "Yes" and "No." The pupil is to underline "Yes" if the word comes from the Latin; otherwise "No." All the words, whether derived from the Latin or not, suggest Latin words, so that the pupil must know their meaning to answer correctly. There are four tests like this; each based on the vocabulary in Smith's "Latin Lessons" covered in a quarter of the year. The other type of test used by Miss Wentworth requires the pupil to give the Latin words from which the English words are derived. There are also four of these for the four quarters of the year. The pupils taking these tests were scored for both accuracy and speed. In both abilities the rather surprising fact was discovered that although the tests were given to pupils in 9B, 9A, and 10B, there seemed to be no increase in ability from semester to semester. The average pupil was able to give the correct answer to about 47 of the 100 words in Test I and 37 in Test II. These results are probably well below the normal, as the tests were given immediately after about

6 weeks vacation due to influenza epidemic. Miss Wentworth also constructed sentence tests with lists of French, Italian, and Spanish words rather than English.

Probably the best Latin tests in the field are those of Professor Henmon of Wisconsin. He has constructed what he calls an easy vocabulary test, one of 50 common first year book Latin words and a similar one of 50 English words. At the end of the first year he secured median scores of 41.5 and 35 on these two tests, the individual scores ranging from 9 to 50. He also has a standard Vocabulary test including 239 words found in all 13 beginners' books and Caesar, Cicero, and Virgil. Later he eliminated 39 words from this as being either of too great difficulty or as misleading, and then divided the 200 words left into four 50-word lists of approximately equal difficulty. In addition to these he has a short list of 25 words for use where the time is limited.

With the advice of a number of Latin teachers, he constructed his Latin sentence tests. These tests were made up from the 239-word list. The whole list of 30 sentences was found to be too difficult, so 14 easier ones were added. Professor Henmon still regarded the list as too difficult. Later he added other sentences and from the whole number constructed four sets of 15 sentences each, and finally ten of 10 sentences each. He regards these later 10 as the best to use.

Miss Hobson in the "School Review" for September, 1920, gives a rather interesting account of the use of the Henmon and the Starch-Watters tests. She concluded that the Henmon tests are too easy to test the best pupils; that the Starch-Watters standards are too high for the first year and too low for the third and fourth years. Her conclusions may not be appropriate to the conditions found in the usual high school Latin as the school wherein most of her data were obtained had a six-year Latin course. She also found that results on the Starch-Watters tests showed considerable agreement with the pupils' school marks in Latin.

The most extensive use ever made of Latin tests was that made by H. A. Brown, now president of the Oshkosh, (Wis.) State Normal School, at the time he was connected with the New Hampshire Department of Education. He states his problems were to determine the following questions in relation to the teaching of Latin in New Hampshire schools: (1) how much Latin do the pupils learn? (2) what is the best method of teaching? (3) what is the relation of grammar and vocabulary ability to translation ability? (4) what is the best method of learning construction? (5) what is the relation of time spent to ability acquired? (6) what are standard norms of ability? (7) are present aims and purposes in the teaching of Latin valid? He used four tests in all. His connected Latin test was a selection from Caesar's Civil War slightly modified. His sentence test consisted, at first, of 20 sentences to which 10 easy ones were added later. His grammar test included 20 Latin sentences with their translations. The construction and the explanation of one word or phrase in each sentence was asked. His vocabulary test consisted of 50 words found in seven beginners' books. Each school presented answers to a rather long questionnaire concerning methods, time devoted to the subject, etc. In his scoring he used a rather complicated method such as has been used in a number of other tests which I think is not necessary for us to discuss here. The results obtained were rather discouraging as to the Latin situation in New Hampshire. Without going into details for the scores, I shall merely cite a few facts to show the pupil's ability on the sentence tests. For example, the average freshman could not translate correctly the sentence, "Homines pugnare parant," while the average senior was just about able to translate, "Dixit aedificium in quo Hannibal esset multos exitus habere." Of the 20 grammatical constructions asked, the average freshman could not give 2 correctly; sophomores, 4.3; juniors, 7.5; seniors, almost 9. These scores are for the end of the year. The vocabulary results are fairly comparable with results obtained on other tests.

Brown presents in his monograph quite a list of conclusions based on scores and the answers to his questionnaire. He found the time devoted to Latin by different schools to vary from 4 to over 13 hours per week, and that ability shown by the pupils had almost no relation to the time spent in study. He classified the methods used by the schools into three groups, which may be called the translation method, the grammatical method, and the compromise method. On the whole, he found the compromise method best, translation method second, but in proportion to the time spent, the translation method was most efficient. He found that time given to the direct study of grammar is largely wasted, and that such study is usually responsible for the excessive amount of time devoted to the subject in some schools. He found also that ability in construction work and possibly composition contributed little to translation ability. In his judgment, however, the greatest obstacle to efficient Latin teaching is the wide range of ability found in the same class. He recommended the following plan to remedy this situation; at the beginning of the year, all pupils who have previously had Latin should take a standardized test and be classified into so-called second, third and fourth-year groups on the basis of their scores regardless of the number of years of Latin previously carried. Thus, pupils of low ability, but still able to do something in Latin would read comparatively easy Latin during the whole high school course; while those of higher ability would probably cover a year or so of ordinary college Latin. He followed up a small number of pupils in their college work and found that those having had the translation method in high school made the best marks later. To summarize, his conclusions were as follows: (1) that Latin is a failure with most high school pupils; (2) that wrong emphasis and inefficiency cause great waste; (3) that drill and routine do not meet the pupil's needs; (4) that the aims of teaching are often lacking or unjustifiable; (5) that the usual first-year procedure is often uneconomical; (6) that the use of class periods in the upper years is ineffective; (7) the pupils' study methods are unsatisfactory; (8) that prose composition work aids translation very little; (9) that present teaching of Latin injures the power of good expression in English; (10) that much of the failure in teaching Latin is due to not applying principles well known in elementary school practice; (11) that we should have a better choice and more interesting variety in material used; that the present method of teaching Latin corresponds to teaching English to foreigners by one year's study of abstract grammar and a little translation; one year on 30 to 40 pages of Grant's "Memoirs"; one year on 30 to 40 pages of Webster's "Orations," and one year of 30 to 40 pages of Milton's "Paradise Lost." As Brown left New Hampshire almost immediately after making this study there, I do not know that any of his suggestions were ever carried into effect in that state.

Next to this study of Brown's the most effective use of tests with which I am familiar is that of the Henmon tests in Indiana at the end of the first semester of last year. They were given to the freshmen in fifteen high schools, the largest of which was a high school of some 500 or 600 pupils. The average number right on a 50-word vocabulary was about 22; the average on a 10-sentence test about 2.5. To show more clearly what this means, the vocabulary test began with such words as "bellum, populus, primus" and ended with such words as "ullus, praesum, quisque," while the sentence which was practically the average of ability was, "Pater vocat filium."

In presenting this subject to you here today, I have done so largely in the hope that you may be influenced to make some use of Latin tests in your teaching. The Bureau of Educational Research is hoping to be able to take the lead in an investigation of the situation in Illinois this year. It is merely a matter of seeing our way far enough through other projects already on hand to determine whether we have the time and energy to undertake another. In case we are able to do so, the cost of the testing material will have to be borne by the schools giving the tests, and you teachers will be asked to grade the

papers. The Bureau will then make the tabulations and report results. The cost of test material is not great, being something like 2 cents a pupil for the use of one of Henmon's vocabulary and one of his sentence tests, and running up to perhaps 5 cents for a more extensive testing program. In case we are able to carry out our hopes along this line, your superintendents or principals will receive letters asking their approval of the plan, and I trust that you will do all within your power to secure their favorable interest. Such tests might be given either at the end of the first semester or at the end of the year, with several advantages in either case. Probably, however, the end of the semester would be the better time, as in that case results could be tabulated and sent back to the schools while teachers and classes are practically the same as at the time of testing. In closing, I realize that I have not given you a satisfactory discussion of any one of the existing tests, but have rather given an extensive outline of all of them in the hope that I might rouse your interest sufficiently that you will study them in detail. After the meeting I shall remain a few moments, and I have with me a copy of each of the tests which I shall be glad to have you inspect. In closing, let me repeat what I stated at the beginning of this talk, that the use of tests is in no way a substitute for a teacher's common sense, but that best results can be obtained by combining all that we can find out about the pupils by tests, teacher's judgment and observation.

The afternoon session was then concluded by an illustrated lecture on Brescia, a Provincial Capital of the Augustan Age, by Professor H. V. Canter of University, who had many beautiful pictures to show us of the Italian Lakes with many a Roman ruin, taken while he was with the Y. M. C. A.

The nominating committee announced the nomination of Miss Sophronia M. Kent, of Jacksonville, as the third member of the Executive Committee. She was accordingly elected, so that this committee now consists of the following members: Miss Julia F. Evans, Proviso Township High School, chairman; Miss Helen A. Baldwin, Southern Illinois Normal School, Carbondale, secretary, and Miss Sophronia M. Kent, Jacksonville.

JULIA F. EVANS, *Secretary.*

5. COMMERCIAL SECTION

The first topic discussed was "Objectives as a Basis for Curriculum Reconstruction," by Principal A. A. Rea, West High School, Aurora. Mr. Rea's paper follows:

Objectives as a Basis for High School Curriculum Reconstruction

A. A. Rea, Aurora

Mr. Chairman, and Fellow Teachers, for I, too, am a teacher: I do not presume to come before you as a commercial teacher, though at one time I pretended to teach book-keeping. I have come before you today rather to confer with you upon one of the perplexing questions of present day education, and I hope that through this conference we may become very much better acquainted. This is one of the things that the Director of this High School Conference has had in mind in sending an administrator into every section of the Conference, that we might come to know each other better and better understand each other's problems, and by working in closer co-operation be able to

better promote the interests of education. We recognize the spirit of reconstruction all about us and we feel the need of it in our high school curriculum, but we are puzzled to know just what to do or where to begin. It is not my work to attempt any reconstruction of the curriculum with you today, but rather with you to look to some means whereby we can arrive at a satisfactory and workable reorganization. Especially shall we consider the value of objectives as a basis upon which to build.

We administrators have been studying this question for some time, and have been discussing it for two years in our section of this Conference, yet I feel that we have accomplished but little, perhaps, however, very much more than we can see; still our task is far from completion. We meet on every side criticism of the high school and its work. The Commercial Department receives its share, and there seems to be an increasing disposition on the part of the public to question the efficiency of the practices we now employ. While the public does not come forward with a constructive program, the criticism is at least suggestive of our weakness, if not a criterion to follow in our efforts to reconstruct our curriculum. We are told that our course does not function in real life; that we are not teaching the things that are needed in business nor the things that are used in real life; that we are giving too much theory and too little of the practical; that we are not turning out men and women prepared to face the real problems of life; and the worst of it all is, these accusations are in a large degree true. Wherein do we fail? We need to ask ourselves this question in all sincerity, and more than this, make a thorough study of the question, attempting to analyze it. Perhaps a careful investigation of our weakness or our failure, it may be, will reveal to us a very definite course of action, or at least some very definite steps we must take in readjusting our curriculum to fit the present needs of a democratic society.

We have too long been following blindly traditional courses, shaped largely by colleges and universities to fit their particular course, rather than to fit the needs of the individual. Our attitude has long been that of the "pupil for the school" rather than the "school for the pupil," and we have entirely lost sight of the individual in our anxiety to meet the requirements of the high standards set for us. We have considered the group as a unit and have tried to mould the group to fit our standards accepted by the colleges regardless of individual or even community interests. Our course calls for Latin and the group has been required to study Latin, not for the benefits received but too much for the sake of the established course; or commercial geography, or algebra it may be, and after four years of such preparation we are told by business that our schools are not preparing for life.

The basic principle of all education was given us 2000 years ago by the Great Teacher when he startled the conservative world with his teaching that "the Sabbath was made for man and not man for the Sabbath," thus placing MAN in the foreground—FIRST, if you please, before the institution, making the institution the servant of man. Today we need to go back to this same principle and place the pupil as the center of our interest, throwing the course and the institution and our pet standards, it may be, into the background subservient to the pupil. The question then arises as to just what is our duty to the pupil. Our answer in the past has been to instruct him in the content of the text-book, and we have been doing this faithfully with all too little consideration as to the quality of the text-book. This method has failed for we have overlooked the importance of training and developing of the individual personality, and this is vital, as L. A. Weigle says, "God and man alike will ask you, teacher, not what have you taught your pupil, nor what have you trained him to do, but rather what have you helped him to become?" Here is our job, to help him "to become." We are responsible for the developing of this personality so that the individual may fit into our democratic society, becoming a useful member of the same.

This is truly an objective of education: something toward which we should all aim in our work and should consider in the reconstruction of our curricula. But is this the only one? Is it all-inclusive? At this point we seem to separate in our views. Some contend for one objective, while others would have more; one three, another four, as for example, Mr. Sandwick of the conference committee, who recommends Health, Wealth, Association and Beauty as the four objectives of high school teaching, illustrated in his chart issued last year and considered in your section of this conference. Your committee of the N. E. A. set up seven objectives in their report (Cardinal Principles of Secondary Education). Others would subdivide these objectives, making ten or more. Then, "who shall decide when doctors disagree?" We seem to be unable to agree upon a definite set of objectives and while we argue we are gaining nothing, for when we have finished we are usually "of the same opinion still." I shall not, therefore, set forth any definite objectives in this discussion. All are good and worthy of consideration, and there are some few upon which we perhaps could all agree though we would not consider them all-inclusive. There is an objection to the term wealth as an objective, since with its generally accepted meaning it is misleading, and undesirable and must be defined before it can be used. The meaning of "association" is also obscure, which makes this term objectionable as an objective. Perhaps no one would object to health as an objective, for surely it should be the aim of all, rich and poor alike, in a well ordered society; and few could object to citizenship, or a worthy use of leisure time, which would tend to make more safe our democratic society, but when we consider them in order of importance again we meet with a wide difference of opinion and again we but lose time and gain nothing.

We seem to feel, however, the need of objectives toward which we should aim in our effort of reconstruction of our high school curricula for otherwise we but flounder blindly not knowing whither we are going, since we have no goal. How, then, shall we determine these objectives? It seems to me that we need first to establish certain fundamental principles of procedure in the establishing of these objectives something like those I mentioned above, namely, first make the individual pupil the center of our interests; and second, adjust our course to his individual interests and needs as far as it is possible. In other words, fit the course to the pupil rather than the pupil to the course, as Chas. W. Elliott says: "The educational publicist must keep in mind the interests of the 95% of the children who do not go to college rather than the 5% who do, for it is in the wise treatment of the mass of the population during youth, that a modern democracy must rely for assuring public health, prosperity and happiness. At every stage or in every grade the course should be suitable for every pupil, no matter what his destination. Flexibility and adaptation to the individual needs is necessary to allow the pupil to concentrate on the studies he prefers and in which he excels, and to enable pupils of different capacity to advance at different rates." The individual pupil, then, must be the object of our study, and the course must be adapted to him. To thus adapt the course to the individual we must look beyond the class-room into his environment, his home, his play, his work outside, his associates, his real life outside of the school-room, or in other words, his "life interests," as Dr. Hollister terms it; or as Prof. White of the University of Pittsburg says, "bring education over into real life."

In truth, are these not the foundation principles of our work: first, take the pupil as the center of our interests; and second, study his real life interests that we may adjust our course to fit them? It is the life interests of the individual that will direct him in the selection of his studies he should pursue, and that will direct us in our instruction as well, in helping him to become a real factor in society.

Then in our choice of objectives, whether few or many it matters but little, only that we have a definite plan, not vague and remote to be attained at the end of life; but rather one clearly defined and based upon the real interests

of life today for the individual, and the course pursued shall be one that really functions in the developing of the personality that is "*becoming*" a worthy member of the home, of society, and a citizen in the fullest sense of the word, worthy of the name and qualified to render his truest service to his nation, to his fellowmen, and to his God.

The report of the Committee on Commercial Curriculum Reconstruction came next, as presented by Mr. Stacey B. Irish, Evanston Township High School. This report is given in full:

Report of Committee on Commercial Curriculum Reconstruction

Any commercial curriculum should be adjusted to the needs of the pupils in the school in which it is to be used. The curriculum will be influenced by the size of the school, the number of pupils wishing to take commercial subjects, and the kind of work to be done by these pupils after they leave school. The nature of this work will depend largely upon the community in which the school is located. It may be secretarial, accounting, buying and selling, or business management; or it may be college or university work.

In constructing a commercial curriculum, our first concern should be for those pupils who are to enter the business world as office workers—stenographers, bookkeepers, and general office clerks—and for those who are to become salesmen and saleswomen.

Our next concern should be for those pupils who are to prepare for executive positions in business. These pupils should be given an opportunity to enter schools of commerce in the universities.

Our commercial curriculum should be so arranged as to permit those who decide to continue their education by work in the academic field to enter our colleges and universities. The election of a commercial course by a high-school pupil should not result in closing against him the door to an academic course in the University of Illinois.

In order to reach these objectives, there must be cooperation by teachers, high-school administrative officers, college authorities, and business men. Such cooperation necessitates concession and compromises. It means an absence of dogged insistence upon comparatively minor points, but it does not require a total surrender, in vital matters, of any one group to the demands of any other group. It is in the hope of suggesting steps toward our objectives that this report has been prepared.

In dealing with high-school pupils, we must keep constantly in mind the fact that preparation for a vocation, however important it may be, is but one of the factors in preparation for right living. Health, ethical and moral standards, group spirit, and many other considerations, must be kept before us if we are to make of the pupil a good citizen.

There can be but little, if any, objection to the premise that a good foundation for a vocational training, as well as for living, can be laid with general, or regular, or cultural studies. These include mathematics, history, the sciences, and the languages—English included. So far as is practicable, these studies should precede the special, or strictly commercial, training. The proportion of general to technical work should vary with local conditions and, to some extent, with the individual aims of pupils.

A good commercial curriculum for a four-year high school should include not fewer than sixteen units, so arranged as to provide for those pupils who leave school before completing the full course. What this curriculum should include can best be judged by a study of the community, with the purpose of discovering what are the possibilities in store for the pupils who are under consideration.

The curriculum outlined by this committee is not submitted as the ultimate ideal, but it does suggest one practical method of approaching our objectives by a process of conciliation and compromise. It is so arranged that pupils taking a commercial course can meet the requirements for admission to the University of Illinois, provided these pupils decide not later than the second year in high school to prepare for entrance. It does give a reasonable foundation in general subjects. It does give a reasonable amount of technical training, and it does allow pupils to enter business through more than one channel.

STENOGRAPHIC COURSE

First Year

REQUIRED UNITS		ELECTIVE UNITS	
English	1	(Elect 1 Unit)	
Algebra	1	Domestic Science	1
Elementary Science (with laboratory work)	1	Manual Training	1
Penmanship	$\frac{1}{2}$	Mechanical Drawing	1
	$\frac{3}{2}$		

Second Year

		(Elect 1 Unit)	
Foreign Language (Latin, French, Spanish, German)	1	Geometry	1
Commercial Geography	$\frac{1}{2}$	Commercial English	1
American History	$\frac{1}{2}$	Ancient History	1
Civics	$\frac{1}{2}$		
Commercial Arithmetic	1		
	$\frac{3}{2}$		

Third Year

		(Elect 2 or 2½ Units)	
English	1	Foreign Language (continuation of language begun in preceding year)	1
Stenography and Typewriting	1	Commercial Law	$\frac{1}{2}$
	2	Bookkeeping	1
		English History	$\frac{1}{2}$
		*Physics or Chemistry	1
		*Geometry a Prerequisite.	

Fourth Year

		(Elect 1 Unit or 1½ Units)	
English	1	Advanced Bookkeeping	$\frac{1}{2}$
Stenography and Typewriting	1	Foreign Language (Latin, French, Spanish, German)	1
Economics	1	Advanced Physics or Chemistry	1
	3	Salesmanship and Business Organization	1

BOOKKEEPING COURSE

First Year

REQUIRED UNITS		ELECTIVE UNITS	
English	1	(Elect 1 Unit)	
Algebra	1	Domestic Science	1
Elementary Science (with laboratory work)	1	Manual Training	1
Penmanship	$\frac{1}{2}$	Mechanical Drawing	1
	$\frac{3}{2}$		

Second Year

Foreign Language (Latin, French, Spanish, German)	1	(Elect 1 Unit)	
Commercial Arithmetic	1	Geometry	1
Commercial Geography	$\frac{1}{2}$	Commercial English	1
American History	$\frac{1}{2}$	Ancient History	1
Civics	$\frac{1}{2}$		
	<u>3$\frac{1}{2}$</u>		

Third Year

English	1	(Elect 2 or 2 $\frac{1}{2}$ Units)	
Bookkeeping	1	Foreign Language continued	1
	<u>2</u>	Commercial Law	$\frac{1}{2}$
		Stenography and Typewriting	1
		English History	$\frac{1}{2}$
		*Physics or Chemistry	1
		*Geometry a prerequisite.	

Fourth Year

English	1	(Elect 1 $\frac{1}{2}$ or 2 Units)	
Advanced Bookkeeping	$\frac{1}{2}$	Stenography and Typewriting	1
Economics	1	Foreign Language	1
	<u>2$\frac{1}{2}$</u>	Salesmanship and Business Organization	1
		Advanced Physics or Chemistry	1

SALESMANSHIP COURSE

First Year

REQUIRED UNITS		ELECTIVE UNITS	
English	1	(Elect 1 Unit)	
Algebra	1	Domestic Science	1
Elementary Science (with laboratory work)	1	Manual Training	1
Penmanship	$\frac{1}{2}$	Mechanical Drawing	1
	<u>3$\frac{1}{2}$</u>		

Second Year

Foreign Language (Latin, French, Spanish, German)	1	(Elect 1 Unit)	
Commercial Arithmetic	1	Geometry	1
Commercial Geography	$\frac{1}{2}$	Commercial English	1
American History	$\frac{1}{2}$	Ancient History	1
Civics	$\frac{1}{2}$		
	<u>3$\frac{1}{2}$</u>		

Third Year

English	1	(Elect 3 or 3 $\frac{1}{2}$ Units)	
		Foreign Language continued	1
		Commercial Law	$\frac{1}{2}$
		Stenography and Typewriting	1
		Bookkeeping	1
		English History	$\frac{1}{2}$
		*Physics or Chemistry	1
		*Geometry a prerequisite.	

Fourth Year

English	1	(Elect 1 Unit or 1 $\frac{1}{2}$ Units)	
Economics	1	Foreign Language	1
Salesmanship and Business Organization	1	Advanced Bookkeeping	$\frac{1}{2}$
	<u>3</u>	Modern History	1
		Advanced Physics or Advanced Chemistry	1
		Stenography and Typewriting	1

After the first year, the strongest pupils might be allowed to take one-half or one unit more, and the weakest pupils might be limited to the same extent.

It is assumed that each course offered for credit at the University of Illinois will be arranged according to the specifications at present laid down by that institution. Granting this, a pupil wishing to enter might choose from the above curriculum the following subjects:

LIST A	
English	3
Algebra	1
Elementary Science	1
Language	2
Geometry	1
	<hr/>
	8

LIST B OR C	
Manual Training or Domestic Science or Mechanical Drawing	1
Stenography and Typewriting and Book-keeping or Stenography and Typewriting (two years)	2
Commercial Law	$\frac{1}{4}$
	<hr/>
	$3\frac{1}{4}$

LIST B	
Commercial Geography	$\frac{1}{2}$
American History	$\frac{1}{2}$
Civics	$\frac{1}{2}$
Science	1
Language	1
Economics	1
	<hr/>
	$4\frac{1}{2}$

The pupil could thus meet the requirements of his high school and gain admission to the University of Illinois at the same time.

The outlines given thus far have been worked out for a school in which there are several sections of commercial pupils and in which many subjects are taught. The following outline suggests how a small commercial department might satisfy the university requirements:

I	
English	1
Algebra	1
Elementary Science	1
Manual Training or Domestic Science ..	1
Penmanship	$\frac{1}{2}$
	<hr/>
	$4\frac{1}{2}$

II	
Commercial Arithmetic	1
Commercial Geography	$\frac{1}{2}$
American History	$\frac{1}{2}$
Civics	$\frac{1}{2}$
Foreign Language	1
Geometry	1
	<hr/>
	$4\frac{1}{2}$

III	
English	1
Stenography and Typewriting or Book-keeping	1
Physics or Chemistry	1
Commercial Law	$\frac{1}{2}$
Foreign Language	1
	<hr/>
	$4\frac{1}{2}$

IV	
English	1
Stenography and Typewriting	1
Economics	1
Physics or Chemistry	1
	<hr/>
	4

*It is true that these curriculums leave much to be desired. The University of Illinois has allowed only one-half unit for Commercial Arithmetic, and that only when taught not earlier than the third year. This practice has worked a hardship upon the high schools, for it has made it difficult to correlate the subject with bookkeeping.

An ideal curriculum would contain Physical Education as a requirement, but whether it should be added to these outlines or substituted for other subjects listed here is a question for further consideration.

Commercial English finds a place in these outlines only for those pupils who do not plan to attend college; therefore, it has been placed in the list of electives.

*The report on the new ruling regarding Commercial Arithmetic was not made until after these outlines had been submitted.

There are valid reasons for placing American history in the semester preceding civics; there are also valid reasons for placing civics in the first half of the four-year course. This is an explanation of the appearance of American history earlier in the course than is customary, as a suggestion of compromise. This also partially explains the place given to English history. The sequence is not entirely satisfactory.

These examples are typical of the conditions upon which we must continue to think and to cooperate. Our work is well begun, but is far from being completed. We commercial teachers can do our part by expressing our opinions, but we are best qualified to do this by making careful studies of conditions in our own communities and reporting our findings to those who have the responsibility of making final decisions as to what shall be done to meet these conditions.

S. B. IRISH,
HIRAM T. SCOVILL,
The Committee.

Report of Committee on Transfer of Responsibility for Commercial Arithmetic Requirements

The committee appointed by the chair at the meeting of the commercial section of the High School Conference November 22, 1918, on Commercial Arithmetic requirements of the University, reports as follows:

The duty of designating standards and general recommendations for Commercial Arithmetic taught in accredited high schools of Illinois has been transferred from the Mathematics Department to the Department of Business Organization and Operation of the College of Commerce of the University of Illinois. This transfer has been duly approved by the Committee on Accredited Schools of the University. In accordance with this action the committee wishes further to report that the Department of Business Organization and Operation, in accordance with this authority, has formulated the following rather liberal requirements for the teaching of Commercial Arithmetic in high schools seeking entrance credit in this subject:

"The amount of work to be covered (in Commercial Arithmetic) is represented by that found in any of the ordinary first class texts on the subject such as Smith's, Finney's, Bookman's, Rowe's *New Essentials*, Thurson's, and Baker's. Instruction should constantly attempt to emphasize the relation of Arithmetic to business customs and procedures."

The change made in the requirements is the one which was sought by the commercial section at the time of authorizing the appointment of this committee—namely, it is no longer required that in order to be accredited the subject must be preceded by two years of high school mathematics.* This modification is made at the request of the commercial section of the High School Conference in order to permit the placing of Commercial Arithmetic as a prerequisite to, or concurrent course with, Bookkeeping.

Respectfully submitted,

HIRAM T. SCOVILL, *Chairman.*

Advantages of attending the High School Conference was the topic discussed by I. L. Rogers, Educational Director, Porter School of Commerce, Evansville, Indiana. This was an informal report by Mr. Rogers, who spoke without notes and who has not transmitted a written report of his talk.

Following the presentation of these papers there was a discussion which centered principally about the report presented by Mr. Irish. The emphasis in the discussion was on "Objectives" as a basis for curriculum reconstruction. The full and rounded development of the

*This statement is misleading. The University Senate made the provision referred to and this has not been repealed.—Editor.

pupil was presented as the true Objective for curriculum reconstruction. It was pointed out that the business man wished their employees thoroughly drilled in fundamental subjects, especially in English.

The discussion of Mr. Rogers' paper brought out the desirability of co-operation between departments and between business men and the school.

Business Session

After the discussion a business session followed, in which it was pointed out that owing to the disruption of the original committee having charge of the commercial section there was no one left in the state to take charge of the work except Professor Weston of the University of Illinois. A motion was made and seconded that Professor Weston be empowered to appoint new members on the Commerce Section Committee. This motion was carried. The report of the Committee on Transfer of Responsibility for Commercial Arithmetic Requirements was then presented to the meeting by Professor Bogart, on behalf of Professor Scovill, the chairman.

The report of this committee was received with applause and a motion was made by Mr. S. B. Irish and seconded by Mr. A. L. Nichols that the Commercial Section express appreciation of the changes made by the Department of Mathematics and the College of Commerce and Business Administration. This motion was unanimously carried.

Afternoon Session 2-5

Round table discussion on the Teaching of Commercial Subjects.

A—Economic Principles. Discussion led by Professor M. H. Hunter, College of Commerce, University of Illinois. Mr. Hunter urged the teaching of economics in high schools and pointed out that while all subjects are not equally well adapted to high school instruction there are certain general principles of economics which can be fully elucidated and made clear to the students, and that a well-rounded and thorough course can be presented well within the grasp of students of high school grade. He suggested that matters of local interest should be especially emphasized and the students encouraged to make use of the knowledge gained from investigation of local interests. A short discussion followed this paper.

B—Bookkeeping. As there was no paper presented on this topic an informal discussion of the subject took place, which was introduced by Mr. Kepler of Champaign High School. The discussion centered around the question, "How Best to Teach Bookkeeping?" and a number of those present related their experiences in this work.

C—Stenography. Miss Frances Grose, Crystal Lake High School. Miss Grose told of her experience in obtaining practice work for her students from teachers in the high school and business men outside. The discussion centered about the points of speed, accuracy and style.

D—Typewriting. No paper was presented on this subject, but a general informal discussion took place. The topics chiefly emphasized were the number of erasures which the student should be permitted to make and the degree of perfection which should be demanded of them. It was evident from the experiences of the various teachers that a high standard was aimed at in high school teaching of this subject.

E—Commercial Arithmetic. Mr. W. V. Snider, Assistant in Accountancy, University of Illinois. Mr. Snider distributed mimeographed copies of questions on Commercial Arithmetic as a basis of discussion, a copy of which is appended herewith, marked Exhibit E. A short discussion followed on some of the topics enumerated.

Suggestive Topics for Discussion—Commercial Arithmetic Round Table

1. Which should be the instructor of Commercial Arithmetic, the teacher of Bookkeeping or the teacher of Algebra and Geometry? What are the reasons for your decision?
2. Should the text be followed without variation?
3. Should the eliminations be adapted to the needs of the school community or along some other basis?
4. What are some of the "short-cut" methods that are commendable?
5. What is the best method used in checking addition?
6. Are there any drills that should be used frequently throughout the course?
7. On what subjects in Commercial Arithmetic should all students be expected to show proficiency at the completion of the course?
8. In what way can the Commercial Arithmetic instructor be of assistance to the teacher of Bookkeeping?
9. Should Commercial Arithmetic be taught solely as a companion course to other commercial subjects, as a course which at times may be correlated with the other subjects in business, or as an entirely independent factor in the school curriculum?
10. Is it true that the reason for the elimination of much of the text material in teaching is that the instructor does not understand the material omitted as he should? What has been your personal experience relative to the above question?

F—Commercial Geography. Mr. A. L. Nichols, Austin High School, Chicago. Mr. Nichols read a paper entitled, "Commercial Geography Material and Its Use," which follows:

Commercial Geography Material and Its Use

The following list of material is a summarization of the replies to a questionnaire sent out to 125 commercial geography teachers thruout the entire country. This questionnaire was sent out in behalf of the commercial geography teachers in the Chicago High Schools, and this summary of replies is prepared from their point of view, but may prove useful to others.

Some form of stereopticon lantern is widely used for transparent projection to visualize instruction. The following lanterns were recommended by different teachers:

Spencer Lens Co., Buffalo, N. Y.
 Bausch & Lomb Optical Co., Rochester, N. Y.—Mazda Lantern.
 McIntosh Stereopticon Co., Chicago—Stereopticon and Reflectoscope.
 Thompson Reflectoscope.
 College Bench Lantern—Electric Arc F-7041.
 Keystone View Co., Meadville, Pa.—Keystone Lantern.
 Underwood & Underwood, New York—Underwood Lantern.
 Victor Ammatograph.
 C. H. Stoelting Co., Chicago.

Most of the replies do not recommend opaque projection. A few claim to have successfully shown magazine cuts, post cards, maps, diagrams, "ad" material, etc.

Motion picture machines are not yet generally used in commercial geography instruction. The machines recommended are:

Devry Motion Picture Machine.
 Pathescope.
 Simplex Motion Picture Machine.
 Edison Motion Picture Machine.

Industrial and commercial films may be obtained from the following sources:

Geo. W. Redden, 1373 Temple Place, St. Louis.
 Atlas Educational Film Co., Chicago (rent, non-inflammable).
 Bureau of Mining, Washington, D. C. (loan).
 Bureau of Commercial Economics, Dept. of Public Instruction, Washington, D. C. (loan).
 Harry Disston & Sons, P. O. Box 1537, Philadelphia (free list of Companies loaning films).
 Board of Education, Chicago (loan).

A post card will bring a catalog from any of the above.

Stereopticon slides illustrating commercial geography can be purchased as follows:

Underwood & Underwood, New York City.
 Central Scientific Co., Chicago—Keystone Views.
 Chicago Academy of Science, Lincoln Park, Chicago.
 T. H. McAllister, 49 Nassau St., New York.
 Geographic Supply Bureau, Ithaca, N. Y.
 Board of Regents, Albany, N. Y. (Dept. of Visual Instruction).
 The Philadelphia Museum, Philadelphia.
 McIntosh Stereopticon Co., 30 East Randolph St., Chicago.
 National Geographic Society, Washington, D. C.

Commercial slides may be borrowed from:

Chambers of Commerce in most cities.
 International Harvester Co., 606 Michigan Ave., Chicago.
 Extension Division, Indiana University, Bloomington, Indiana.
 Publicity Dept., Canadian Pacific R. R.
 Commercial Museum, Philadelphia.
 Public Museums in many other cities.
 Public Libraries in some cities.
 Dept. of Visual Education, Chicago—Board of Education.
 Ryerson Library, Chicago.
 Chicago Art Institute.
 Academy of Sciences, Chicago.
 University Extension Division, University of Wisconsin, Madison, Wis.

Collections from the above sources are not listed in detail here, as a post card in each case will bring a complete catalogue.

Commercial slides are manufactured locally in some schools as follows:

1. As part of work in class in photography.
2. Work done by chemistry class.
3. Cover glasses dipped in weak gelatine solution and dried. Pupils then trace cuts, graphs, etc., with waterproof ink. Pupils describe pictures they have manufactured to class.
4. Copy on yellow labeled dry plates and print by contact. Use hydrochinon developer for contrasty plates, metol-hydro for softer plates.

Collections of commercial commodities are either bought outright from concerns manufacturing them for sale or are obtained from commercial houses as advertising by solicitation or are presented to the class by present of former pupils. Practically all the teachers who replied make some use of commercial exhibits.

Firms selling complete collections are:

Commercial Museum, Philadelphia.
 Central Scientific Co., Chicago.
 Geography Supply Bureau, Ithaca, N. Y.
 Standard Industrial & Commercial Exhibits Co., New York.
 Scientific Supply Co., Central National Bank, St. Louis.

A list of commercial houses supplying educational exhibits free or for a nominal fee for advertising purposes would be voluminous and is not attempted. A careful reading of the replies to this question on the questionnaire discloses the fact that practically all manufacturing establishments that advertise nationally in the magazines either have prepared educational exhibits or will make them up if tactfully requested.

The third method of securing commercial specimens, by having the pupils add to the collection each year was highly recommended. The pupils take pride and interest in the entire collection if they receive credit for exhibits prepared and presented to the department by themselves.

Several interesting suggestions were made as to how to use commercial specimens most efficiently. The suggestions were:

1. Have a well lighted and well ventilated commercial research room adjoining the classroom and separated from it by glass. Have roller curtain on door to shut out view of casual passersby in the corridors. Have filing cases and reference books in easy access to the specimen collections. Have a pupil custodian in charge of the collection at all times. This relieves the teacher of a mass of detail and places it on the shoulders of the pupils where it belongs. Have the collection displayed in permanent glass cabinets which are labeled and have descriptive cards accompanying.
2. Assign special specimens and have talks given to class by pupils after investigation, or
3. Have duplicated questions based on specimens and require careful written report.

City museums are used by teachers as follows:

1. Loan collections like those of Chicago Field Museums.
2. Class excursions to Museum on school time.
3. Send pupils to Museums in groups and require oral and written reports.

The success of either of the plans suggested depends on a careful understanding between the teacher and Museum Director and an intimate knowledge on the part of the teacher in the contents of the museum.

Practically all replies emphasized the importance of using local industries to illustrate Commercial Geography. Field trips to local industries are valuable from the standpoint of knowledge gained and for their effect on the boy's or girl's outlook on the business of his city. Most local industries dislike to show large groups through their plants because the girls and men employed practically stop work while the class is being shown through. Also many industries have valuable material in small pieces which they cannot afford to expose to the curiosity of a group of pupils. This is an unnecessary strain on the generosity and public spirit of the factory owner. On these accounts the replies agree that *sending groups* is better than *taking classes* to local industries. Pupils should study the industry *before* visiting the plant and be given or prepare a list of topics to investigate. Arrangements for a permit, guide, etc., should be made beforehand so that there may be no loss of time or enthusiasm after the pupils reach the plant. Parents of pupils in the class are often glad to act as guides in plants where they are employed.

The first choice of text books was J. Russell Smith's "Commerce and Industry," published by Henry Holt & Co., New York and Chicago.

Other books which were recommended as texts and contain admirable supplementary reading are:

Bingham—"Commercial Geography," Ginn & Co., Boston and Chicago.
 Trotter—"Geography of Commerce," MacMillan & Co., Chicago.
 Redway—"Commercial Geography," Scribners, New York.
 Gannett—"Commercial Geography."
 Brigham & McFarlane—"Essentials of Geography."
 Keller & Bishop—"Industry and Trade," Ginn & Co., Boston and Chicago.
 Robinson's "Commercial Geography," Rand, McNally & Co., Chicago.
 Dryer's "Economic Geography," American Book Company.
 Salesbury, Barrows & Tower's "Elements of Geography."
 Adams—"Commercial Geography."
 Fisher—"Resources and Industries of United States."
 Tarr & McMurry—"Complete Geography."
 Russell's "New Commercial Geography."

A great many of the replies did not distinguish between supplementary text books and reference books. Of those who did draw this distinction, several were not favorably inclined to the use of supplementary text books, claiming that it is better to use one book and learn it thoroughly than to scatter among many. Others were very much in favor of supplementary text because they teach the use of libraries and add much to the interest of the class discussion. They furnish a means of doing away with the traditional recitation. Those who held this view even went so far as to say that the ideal condition would be to have as many different text books by different authors as there are pupils in the class and assign lessons by topics rather than by pages, but they conceded that this was only an ideal condition and not one that it is possible to realize. They recommended, therefore, that the class be divided into sections and that one section be assigned to prepare the work each day in the supplementary texts. This plan seems to be logical and with the aid of a pupil secretary can be worked out with little added detail for the instructor.

It was suggested in some of the replies that the best way to use supplementary texts is to have a pupil committee appointed from among the best scholars, prepare a card index with topics, from the class text-book as subjects for the cards, followed by reading references in the supplementary text.

For reference books the following were mentioned:

Encyclopedia.
 Census reports.
 Toothaker's "Raw Materials of Commerce."

Freeman & Chandler, "The World Commercial Products," Ginn & Co.
 Yeates, "Natural History of Commerce."
 Woolman & McGowan, "Textiles."
 Carpenter, "Foods and Their Uses."
 Newell's "Irrigation."
 The World Almanac, published by The New York World.
 James Russell Smith, "Industrial and Commercial Geography."
 Chisholm, "Handbook of Commercial Geography," published by Longman, Greene & Co.
 Daily News Almanac, published by Chicago Daily News.
 Pacific Ports Annual, 1919, published by Pacific Ports Magazine Co., Seattle, Wash.
 Allen, "Geographical and Industrial Studies," Ginn & Co.
 Nelson & Sons, "How It Is Made."
 Bogart's "Industrial History," Chap. I.
 Ross, "South of Panama."
 Johnson, "Elements of Transportation," Appleton & Co., New York.
 McGowan & Waite, "Textiles and Clothing," MacMillan & Co., New York and Chicago.
 King, "Farmers of Forty Centuries," Democratic Publishing Co., Madison, Wis.
 Official Railway Guide, National Railway Publishing Co., New York.
 Annual Editions of Railway Library, Bureau of Railway News and Statistics, 80 East Jackson Blvd., Chicago.

A postal card to the publicity department of all large railroads and steamship companies will bring illustrated booklets about the country covered by their lines.

Thomas Cook & Son, 245 Broadway, New York, will furnish booklets about foreign countries.

The replies do not agree as to the use of individual atlases. The suggestions running all the way from no atlas at all to "any atlas they can get hold of." A suggestion found on many of the answers was to have the pupils make their own atlases from day to day as the work progresses on outline maps. These outline maps can be made cheaply in quantities by having a zinc plate made.

Individual atlases recommended:

Poates, "Complete Atlas of the World."
 Bartholomew, "School Economic Atlas."
 Cram's "Quick Reference Atlas of the World."
 Longman's "School Atlas."
 Individual railroad and real estate maps are also valuable.

For large reference atlases the following are suggested:

Bartholomew's "Commercial Atlas."
 Rand, McNally & Co.'s "Commercial Atlas of America;" also their World Atlas.
 Hammond's "Standard Atlas of the World."
 Nelson's Encyclopedia (loose-leaf).

In the matter of wall maps there is no uniformity of practice and the individual teacher would better write to the various map publishers for catalogues.

A. J. Nystrom & Co. of Chicago handle the famous Johnston maps; also the new Finch series, which is most highly recommended.

Rand McNally & Co. carry the J. Paul Good series, which is standard for Commercial Geography work.

Geo. F. Cram's maps are not mentioned in the replies, but are worth investigating.

Blackboard outline maps to be filled in each day in class and then erased are recommended very highly by many teachers.

State and U. S. Geological Survey maps were mentioned in a few of the replies.

Wall charts are manufactured by some teachers in this way:

Photograph charts on "Yellow Label" plates. Project image on unfinished blue-print cloth. Trace with pencil and ink in with Higgins water-proof ink. Lines of all widths can be made with single strokes with "marking pens." Large surfaces are quickly colored with silk sponge and colored ink.

Commercial papers are not widely used for High School Commercial Geography instruction, the consensus of opinion being that they are usually too technical, at least for second year pupils.

The only purely commercial papers mentioned in all the replies were:

The Daily Trade Bulletin.
Commerce and Industry.
Wall Street Journal.
Chicago Commerce.

Magazines are recommended by nearly every teacher who replied and practically every magazine on the news stands was named in one or more of the letters. The individual taste of the pupils determines the choice of the magazine. The aim of all our Commercial Geography teachers seems to be to *develop a reading habit* in connection with our own country and foreign countries. Many teachers encourage pupils to bring magazines for the class files and have a pupil committee to determine if the articles brought in are worth filing, to classify, file and card index them. This results in pupils' pride of ownership in the file and interest in its maintenance.

Government publications, it appears from the replies, are used more widely than one would suppose. This is probably due to the fact that most of them are free. The objection to Government publications as a medium for teaching Commercial Geography to second year High School pupils is the same as the objection to using strictly commercial papers, i. e., the matter is not interesting to them in very large quantities. However, the way to acquire Government reports from Washington should be taught and experienced as a part of the Commercial Geography course. A letter written to Mr. Josiah H. Brinker, Superintendent of Documents, Government Printing Office, Washington, D. C., asking him for a *complete set* of price lists of Government publications, *No. 10 to 69 inclusive*, will bring you a catalogue of an almost complete reference library in Commercial Geography from which the more advanced pupils may order Government books to suit their individual tastes.

The diplomatic and consular reports of Great Britain may be obtained through Wyman & Sons, Ltd., Fetterlane, E. C., London.

The Bureau of Statistics and Immigration, Olympia, Washington, publish a periodical booklet entitled "Review of Resources and Industries."

The Educational Bulletin prepared by the Municipal Reference Library, City Hall, Chicago, contains a list of free booklets describing the industrial and governmental life of Chicago.

The Commonwealth Bureau of Census and Statistics, Melbourne, Australia, supply publications on that country.

The Department of Interior, Ottawa, Canada, will supply a little book entitled "The Geography of the Dominion of Canada."

The Bureau of Provincial Information in the various provincial capitols of Canada will furnish publications about their provinces.

A postcard from each pupil in a Commercial Geography class, sent to the State Department of Agriculture of an assigned state, will bring back to the class interesting commercial reading about the different states in the Union.

Similarly, postals from the pupils of a class to the Chambers of Commerce of the different large cities of the country, will bring back information about the great centers of commerce and industry.

The U. S. Department of Agriculture in Washington, D. C., publishes monthly a free list of publications, some of which are interesting and illustrate Commercial Geography.

Weather Bureau reports usually interest pupils and illustrate one of the controls of commerce.

The Year-book of Agriculture, free if obtained through a senator, was mentioned in many of the replies.

G. Business English

Mr. Stacey B. Irish, Evanston Township High School

Mr. Irish emphasized the point that the teacher of Business English was often compelled to go over the elementary points of sentence construction, punctuation and other matters with which the student should have been thoroughly familiar before he entered upon the subject of Business English. In the discussion which followed the need of co-operation between the different departments of the high school in securing the best use of English and the application of these principles to all their school work was insisted upon.

The round table discussion was informal and in only one case was the topic read from a manuscript.

6. COUNTY SUPERINTENDENTS' AND VILLAGE PRINCIPALS' SECTION

The County Superintendents' and Village Principals' Section met in Room 119, Physics Building, 9:00 A. M., November 19. County Superintendent S. D. Faris was continued as president, 1921; County Superintendent O. Rice Jones, 1921; County Superintendent Charles H. Watts, 1921; County Superintendent W. A. Hough, 1922; W. S. Booth was continued as permanent secretary.

In the morning P. E. Belting, University of Illinois, presented a very interesting paper on "The Development of Morale in High School Pupils as a Factor in Supervision."

Principal M. H. Willing, Springfield, made a brief report on "Objectives as a Basis for Curriculum Reconstruction."

"Standard Tests for High Schools" was presented in an interesting way by B. R. Buckingham, University of Illinois.

The afternoon session included a "Report of the Committee on Harmonizing Standards for the University of Illinois and the State Department of Education" made by Principal L. W. Smith, Joliet. After discussion by members of the committee and members of the section, the report was accepted and the committee continued.

The committee consists of H. A. Hollister, J. C. Hanna, L. W. Smith, W. A. Hough, D. F. Nickols, Leo Changnon, W. J. Zahnow.

The report of the committee and the resolution unanimously adopted follow:

Minutes of the Meeting of the Committee on Common Standards for Department of Public Instruction and for the University of Illinois

After considerable preliminary discussion, the Committee took up for consideration the suggestions which were in typewritten form and prepared by Mr. John Calvin Hanna of the State Department of Public Instruction. These suggestions had for their aim the organization of the material at hand for the consideration of the Committee. The suggestions were listed under the following heads:

1. Is there a difference in the aims and purposes of these two sets of standards, and if so, what relations between that difference and the problem of harmonizing them?

2. Are there differences between the published standards of the State Superintendent and those of the University, and if so to what extent will these differences apparently interfere with the problem of harmonizing, and how may these differences be taken care of?

3. Is there a difference actually in the strictness or thoroughness with which these practically similar standards are applied?

4. Practical problems arising in connection with such an effort. It was the decision of the committee that it would make most progress in the solution of the problem before it if it examined the apparent differences between the procedure of the State Department of Public Instruction in its function of inspecting high schools and that of the University as conducted through the High School Visitor's office. Many points of similarity were found. In fact, the standards and procedure of the two standardizing institutions are remarkably similar. Certain apparent differences, however, developed in the discussion.

1. The University requires four years of collegiate preparation beyond the high school for high school teachers whose work is to be accredited to the University. The University does not enforce this requirement of four years of collegiate preparation in a manner *ex post facto*, but accepts teachers who are already employed in accredited high schools even though they do not have four years of collegiate preparation beyond the high school. The State Department does not make this requirement of four years of collegiate preparation beyond the high school, but is working toward it. The State Department still requires two years of collegiate preparation beyond the high school.

2. The state grants what is called "Probationary Recognition" to schools which do not quite come up to its standards. Probationary recognition confers the right upon a school to collect tuition and also the right to admission to the County Superintendents' examination for teachers' certificate. The university has no such probationary arrangement. There should be some equivalent policy as regards these schools.

3. The University requires that the elementary schools below the high school shall at least have four teachers. The state requires only three. This requirement is, however, likely to be modified by the State Department accepting the four teacher standard.

4. As regards material equipment, the University seems to be more rigid in some respects in its requirement than the State Department.

5. The University waits for an application for accrediting to come from the school in question, thus it has a smaller number of requests for accrediting than the State Department because schools are practically required to make application to the State Department in order that they may secure the right of charging tuition to students coming from non-high school territory.

6. The State Department has certain requirements as to the course of study. It requires that Physiology be taught in the first year. It requires four

years of English and it requires one year of American History. The University, on the other hand, aside from its six units which are required of all high school graduates, has a flexible arrangement. The six units, however, are just as fixed as the subjects referred to as insisted upon by the State Department.

After studying the differences for a considerable period of time, it seemed to the Committee that it was possible to so harmonize the work of the two agencies that duplication of effort might be avoided and that each department might assist the other in inspecting the schools without injuring its own efficiency. It was the opinion of the Committee that this could be brought about in the following manner:

1. By frequent sympathetic conferences between the two offices in the matter of the interpretation of standards. In those items in which the two institutions have exactly the same interpretation of standards it will be easy for both of them to apply such standards. In case the University is visiting its schools and wishes to make a recommendation to the State Department, it can apply the state standards in interpreting the work of that school as the basis for a decision on the part of the State Department. On the other hand, when the State Department is visiting schools it can make up its mind as to the desirability of that school for recognition. It can also examine it in view of the accrediting standards of the University and make a recommendation to the University on that basis.

2. Frequent conferences of this kind would be expected eventually to result in practically identical standards. The work of either institution would be substituted for the other. The entire purpose being that each shall supplement the work of the other.

Resolution Adopted.

RESOLVED, That there shall be created a State High School Admissions Committee consisting of the President of the University of Illinois, the Superintendent of Public Instruction, a High School Visitor from the University of Illinois, a High School Supervisor from the office of the Superintendent of Public Instruction. This committee shall be empowered to determine the list of recognized four-year high schools for the State of Illinois whose graduates shall be admitted to the State University without examination.

"Agriculture in the Small High School" was discussed in a very interesting and profitable way by A. W. Nolan, University of Illinois.

The following papers were presented:

The Development of High School Spirit as a Factor in Supervision

Paul E. Belting, University

The prerequisite for the success of any supervisory program is the proper administrative organization of the school board in its relation to the chief executive officer, the supervisor or principal in his relations to the superintendent, the teachers in their relation to the principal and the pupils in their relation to the principal and teachers.

In general, a fundamental reorganization in the conceptions of the purposes and functions of boards of education is necessary, both for proper administration and the development of high school spirit. Public school boards arose at a time when the office of superintendent was unknown. Conditions of life were so simple that the board acted as the executive and legislative head of the school system. We are now living in an age of increasing specialization—a time when executive management must be centered in a responsible officer if efficiency and success are to be attained. Business such as the Pennsylvania

Railroad Company, the American Telegraph Company, the Edison General Electric Company, and the Woolworth Corporation, would soon pass into the hands of a receiver if the boards of directors in these activities acted as the executive heads of the organizations. What they actually do is to seek a chief executive officer, delegate authority to him and then hold him responsible for results.

In no other way can the business of the school system be performed effectively. The school board is elected as the people's representative to act in a *legislative* but not in an *executive* capacity. Their principal and foremost duty is to choose an executive officer, delegate authority to him and then hold him responsible for results. They can pass upon his recommendations for the annual budget for the maintenance of the school system; pass upon his recommendations for capital outlay such as buildings, sites and improvements, and determine the means of financing such outlay either in bonds or in loans; advise with the chief executive officer in order to form a group judgment upon his recommendations for readjustments and extensions of educational activities; employ principals, teachers and janitors only upon his nomination and recommendation, and determine after consultation with him the salary schedule.

It is not the duty of the school board in its official capacity to observe or investigate the efficiency of instruction; it is not the duty of the school board to receive written or oral communications from citizens on matters of administrative policy; it is not the duty of the school board, acting in its official capacity, to direct athletics and manage extra-curriculum activities; it is not the duty of the school board members, acting collectively or individually in their official position, to investigate the fraternity problem in high schools.

Only when the school board realizes that its functions are general and not specific, when it sees that supervision and administration is a technical proposition requiring training and experience comparable to that of the business executive, then will it be possible to more truly and adequately realize that the schools exist, not for giving any teacher a living, not for furnishing a political future for ambitious citizens, but that the school system exists in order that the boys and girls may solve the ever increasing problems of a complex social, economic and political life.

The superintendent or the township high school principal must be an educator and not a clerical or business man only. He must be a man who knows how to, and can, carry out his policies; to have the control of finances centered in the treasurer of the school board, and to have supervision centered in the superintendent or principal destroys the efficiency of most supervisory programs, because the superintendent or principal cannot control the purse strings. The educational expert must be the chief executive officer who sees and administers the job as a whole—who knows the school plant and its equipment; who knows the needs of the school population and who knows the changes necessary from time to time in his program. In addition to being a student of these things he must be a leader who can get the public to see his point of view, even if it is necessary to teach them. Finally the chief executive officer must be an individual who is capable of coordinating the business, professional and supervisory program in his school system. Otherwise, all educational insight and knowledge are worthless.

Hence, the administration succeeds or fails in the chief executive *per se*. When the school system is well organized there is a hierarchy of authority with the superintendent as chief whose functions are broken up and delegated to specialists. The superintendent or principal is not succeeding unless he is getting the best service out of those who are working with him, including the students themselves. It is impossible to have teachers increase their own salaries, to make out their own programs, supervise their own instruction, and do as they please generally. Teachers must realize that the principal or the superintendent is the chief officer through whom all official relations with the school board are carried

on. If the teacher is not willing to show absolute loyalty to the superintendent in serving the children it is her duty to resign at once. On the other hand, it is the business of the administration to champion the cause of the teachers before the school board and the public, or ask for their immediate resignation. Superintendent and teachers each must have a mutual respect for, and trust in, the other if they hope to work in harmony for the best interests of the pupils. However, some one must be constantly in charge of reforming the high school group, for reformation usually is the task for the supervisor or principal in the ordinary high school.

In many of the high schools the supervisory functions of the principal are entirely wasted in that most of his time is concerned with clerical pursuits—tasks that could be more accurately performed by a high school graduate employed for that purpose. A high school supervisor or principal ought always to ask himself: How much better teaching is done as the result of my efforts? How much better off are the pupils as the outcome of my labor? Do the pupils get a hundred dollars in return for the hundred dollars spent on myself as a supervisor?

Traditionally, education was an extra or an added-on affair so that supervision was of little concern. Supervision and even education were of secondary importance. All that was expected of the school was that provision be made for the tool subjects. Now the schools are being called on socially as never before. The family and the church have ceased to exercise the same power as formerly. We are not thinking alone in this century—which will be classed as that of children—in terms of vocations, but also in terms of social efficiency, social progress, good citizenship and a finer type of boys and girls mentally and morally.

Granted that an administrative organization like the one that has been outlined is necessary to provide the highest and most efficient education for the boys and girls for whom the school exists, let us examine more specifically the work of the supervisor and principal and the teachers in developing high school spirit.

We hold out the hope, yes, even the supervisor we expect, that the boys and girls of the high school will learn, if they do not already know, the rules of politeness, courtesy and manners; that all the boys in the classroom do not attempt to pass through the classroom door at the same time, but that the girls and teachers go first; that the pupils neither jump nor run downstairs; that the pupils do not put their feet on, nor sit in, nor jump out of the windows; that the pupils do not stand nor walk on the highly polished desks; that the pupils do not mark the walls; paint the building with class colors; drape the statuary; cut their names on the woodwork about the buildings; steal the flowers in the flowerbeds; steal the laboratory equipment; nor break the windows. In a word, they must realize that they are the guardians of the public property entrusted to them. Boys, if they do not already know it, must learn through their teachers and supervisors to take their hats off on entering the building or passing through the corridors, or going into the classrooms; that smoking is not done in the building nor on the grounds; that the teachers are always to be treated with respect; that the teacher is not to be locked out of the classroom; that the women are to be addressed or spoken of at all times as Miss or Mrs. and that the men are to be addressed or spoken of as Mr., instead of by a nickname or by the given or family name.

Inefficient administration and supervision is largely responsible for the misdirection of the pupils' energies in the organization of freshmen, sophomore and junior classes. Even school boards have rules and regulations sanctioning and recognizing such organizations. Extra-class groups formed on this basis accomplish little good that might not be better performed by another kind of organization, while usually these classes become the basis of misdirection of school spirit. The class party of under classes is a fertile field wherein the juniors and seniors often operate to steal the ties, stockings, etc., of the fresh-

man and sophomore boys and even of the girls, to say nothing of the abduction of a prominent member of the outraged class—all in the name of class spirit. The consequence is that such action usually utterly disgusts the home and the community, to say nothing of the demoralizing effect upon the school itself.

Some eighth grade graduates actually fail to attend high school while others are driven from the school itself because of the time-honored custom of initiation and hazing wherein the prospective recruit is made to "run the gauntlet," receive a cold bath, or have his body painted in the high school colors—all to the honor of high school spirit and, as indicated above, to the utter disgust and righteous indignation of the home.

It is just that feeling of group consciousness; it is just that dynamic element in high school pupils that ought to be capitalized and directed into the proper channels by an efficient supervisory organization. The school ought to provide, therefore, in substitution for class organizations below the senior class, extra class activities of such a nature as to fit the interests of different groups of pupils. Literary societies, debating clubs, dramatic organizations, wireless clubs, current event clubs, industrial and fine arts clubs, agricultural societies, student welfare organizations, may thus be instituted by the high school.

Furthermore, every pupil should be required to belong to some one organization for which he receives credit toward graduation. Pupils select their own officers, make out their own programs and carry on their own business under the direction of sympathetic teachers who have been employed on the basis that they can identify themselves with some student activity other than the regular class exercises. Such organizations fulfill most of the legitimate activities of class organizations, and, in addition, a great many more functions that class organizations cannot undertake at all. In addition to the regular programs which are held, the social life of each class can and should be expressed. No longer will the freshmen be separated from the seniors, but lower and upper classmen meet shoulder to shoulder on the basis of common interests in activities which make it possible to pass along the ideals of the school from the seniors to the freshmen so that the predominant expression of loyalty is to the school and not to any particular class.

Occasion is given for all of the societies to come together in a stunt show, a circus, or a minstrel show wherein each society puts forward its best number.

Since such an entertainment comes as an expression of the interests of the pupils under the guidance of the teachers, there is no need to worry about having an audience. The most skillful and effective advertising among high school pupils occurs when these high school pupils themselves advertise the school. No one has the compelling power over parents and patrons that children have and no one is prouder than the parents of the successful performance of their children in public. Usually the reason for small attendance at entertainments given by the school is that the entertainment originates with the school board or with the superintendent or with the teachers only, and thus does not reach the interests of the pupils themselves.

When students become imbued with this kind of activities the problems of discipline decrease greatly because the school has provided for the expressive side of life in a wholesome way. The result is that the school as a whole does not have to spend its time in destroying public property. Moreover, we have provided in this organization for the worthy use of leisure. Out of such situations little opportunity occurs for the pupils to oppose the administration. Through this kind of organization the class fight, color rush, shuffling of the books, and the commencement riots, are largely done away with. In fact, the growth of high school fraternities is an index of the fact that such organizations have not been provided and have not been supervised.

One must realize, however, that the development of high school spirit in pupils will not take care of all of the disciplinary problems. It will solve a large

number of those problems, however, whose business it is for the pupils to solve. It will inform the principal of certain misconduct in the student body without tale bearing, but there are times when the supervisor or principal must say "No" unqualifiedly and there are times when such misconduct, if persisted in, should result in the pupil or pupils receiving a quick and just retribution. Supervisors and teachers have failed to use, or have made mistakes in using, one form of extra-class activities that lie very close to the original instincts of the human race. It is evident that a school gets a prominence in the public mind through the successful administration of athletic activities or an insignificance in the community through the mismanagement of athletic contests.

An outgrown philosophy has permitted rather than encouraged athletic games with the result that these groups have often run counter to the wishes of the school board, superintendent, principal and even teachers. Even at the present time some boards of education object to a form of athletic contests because of the attitude in the community which classes football as a little better than prize fighting. Principals have often had sore trials because of an attempt to control athletic finances, but in an unbusinesslike and even autocratic way. Teachers have often thought of athletes as parasites of the student body and teachers have often thought of athletes as individuals whose popularity was the sole and only reason for giving them passing grades.

The school board is logically and socially under as much obligation to provide the proper equipment and the right kind of athletic teachers as it is to furnish laboratories and employ several mathematics teachers. Under the proper direction, football will pass from a slugging and wrangling match to a respectable game. High school principals should have enough business acumen to control or direct athletic finances in such a way that, on the one hand, some members of the team do not pay the carfare and the hotel bills of their girl friends on trips from home, or give public receptions or dances with the season's gate receipts. On the other hand, high school principals should render strict account of all of the athletic funds so that the students do not get the impression that the athletic receipts are being used for recouping the principal's salary. Finally, it is high time that high school principals and teachers share in the responsibility for the failure of athletes in their class work. I have an idea that too often members of athletic teams have been allowed to fail, but were not checked up until the night before the big game. The team and the school feel that there is a lack of sympathy and cooperation of the teachers with the team, although they may not pick out the reasons. Resentment against the school develops in this way from time to time until unsocial acts, or even open rebellion occur. It is about time that the administrative organization—the school board, chief executive officer and teachers—realize these facts and make them produce a good instead of an evil spirit.

The supervisory program will insist that the right high school spirit will be such that the home school will treat the visiting team as guests instead of enemies; instead of being met at the train by a group of roughnecks who escort the team to a hastily improvised dressing room and then follow them to the field with clubs, bricks and rotten eggs, and, as occasion demands, use one or all of these weapons; instead of being required to bathe in a tub of water drawn from the town pump and carried a block by the members of the team; and, instead of being fed on a fifteen-cent meal or go hungry, the home team, through its student manager and faculty advisers, ought to meet the visitors at the train in automobiles and provide the best conveniences and treatment that the town affords.

Too often inefficient officials are obtained for a low price resulting invariably in a wrangling contest instead of an exhibition of skill. Moreover, since the home team secured the official, he is expected to, and too many times does, decide in favor of the source from whence he draws his pay, regardless of the

merits of the case. How can one expect to stamp out suspicion and unsportsmanlike conduct, either in the team or on the sidelines, under such conditions? The school has failed to take advantage of an excellent opportunity to put virtue into practice.

The coach or the principal or both take the team away from home to play a game, and not for the members of the team to visit relatives, usually of the feminine sex. Discipline cases on such trips ought to be dealt with very wisely in such a way that the offender will be deprived of the opportunity to take a similar trip again. The writer knew of a principal who forbade the hotel proprietor to lodge or feed part of the team because the boys did not come back to the hotel at the appointed time. These individuals were out of money and loafed about town all night. Furthermore, they had nothing to eat and were refused the right to ride home on the ticket of the team. The final result was that they beat their way home on a freight train. Suppose that a boy had lost a leg or an arm, the blame would have rested upon the shoulders of the principal. The boy who disobeyed should have been treated as were the other members of the team, taken home and then disciplined. Such disobedience would usually stop if the transgressors were left at home on the next trip. Parents will then let their children go because they know that the school will be responsible for them and return them safely. In the above mentioned case, the public, without analyzing the situation, blamed the principal; in the latter case they would have supported him.

Occasionally rooters want to go with the team to the neighboring city, but the school says in its official capacity that it will not be responsible for others than the members of the team. What an attitude! Shouldn't the school rather say to the boys and girls: "Come along because the teachers are also going? We will be jolly good chaperones." It takes a proper spirit for that kind of feeling. If the trains do not run on suitable schedule the school might well provide for a special train, but in such a case the individuals are not to break the windows, or to interfere with the conduct of the train by its crew. But they are to so act that the conductor's comment is that these boys and girls are the most high-spirited but at the same time the best behaved, the most courteous and polite group of people that he ever had on an excursion trip.

The boys and girls are going for the purpose of seeing the game, but not for the purpose of engaging in school fights, in color rushes or to see how many sweaters, blankets and ribbons of the other school they can steal. Were the pupils told to give the other school their colors if they wanted them most of the fights of this nature would disappear. Some supervisors have not seen this situation at all.

High school spirit can be directed and guided into the proper channels, or it can be neglected until such a time that it becomes destructive of public property. Why on earth should a group of vigorous school boys raid a restaurant or break into motion picture shows in celebration of the game? Bonfires are legitimate, perhaps, but only when public property is not endangered. It is desirable that the city officials give their consent to the making of a bonfire in the public square. Then, it is entirely possible that the fire department be asked to be present in case of emergency. Business men, then, will rightly compliment the team because of its skill and the boys and girls because they were thoughtful, courteous and polite even in their celebration of victory. These situations are such that much of that which is called sportsmanship, much that is called high school spirit, much that is called virtue or good citizenship, appears. True sportsmanship and morality and high school spirit, after all, are largely matters of conduct in one's relations to his associates.

Objectives as a Basis for Curriculum Reconstruction

M. H. Willing, Springfield

Members of the County Superintendents' and Village Principals' section: I am a newcomer in the Illinois school field and a visitor for the first time at the Illinois High School Conference. I do not feel altogether unfamiliar with this environment, however, since for a number of years I have been a conscientious reader of the printed reports. I have used these reports as source books of educational procedure and professional inspiration. I have observed the gradual rise of the movement toward general curriculum readjustment in Illinois under the auspices of this conference. My mission this morning as indicated to me by the Director of the Conference is to present to you what has been done along one of the major lines of this general reconstruction. I am to discuss objectives as the basis of reconstruction. Two years ago in a remarkable address Dean Charters presented a carefully reasoned statement of the steps involved in a rational revision of the secondary school curriculum. Without recalling in any detail his discussion, let me remind you of these steps.

1. First, study the life of man in its social setting and determine the ultimate objectives.
2. Analyze these objectives and continue the analysis until secondary objectives of workable size are obtained.
3. Arrange these in the order of importance.
4. Raise to positions of higher order in this list those objectives which are high in value for children but low in value for adults.
5. Determine the number of the most important objectives which can be handled in the time allotted to school education after deducting those which can be learned outside of school.
6. The best practice of the race in handling these objectives should be collected.
7. Arrange them in proper sequence according to the psychological nature of children.

The elaborate program provided for in this outline might very well seem discouraging, as Dean Charters admitted to those who were impatient to get to practical work. Fortunately, it was possible, said the speaker, to carry on work on these various planes contemporaneously; to start with what we had and revise it with reference to commonly accepted objectives. The reports of this conference during the last few years indicate that a great deal of this actual work has been carried on.

Following the address of Dean Charters, among other committees appointed was one under the chairman ship of Principal Sandwick of Highland Park to discover and present the ultimate objectives of society which should determine our future curriculum. Mr. Sandwick reported for his committee at the last session of this conference. He presented four objectives: Health, Wealth, Association and Beauty. These were an adaptation of the analysis made by Professor Albion Small of the Department of Sociology, University of Chicago. Mr. Sandwick explained the terms in detail and defended this particular selection of the remoter objectives which should govern the new curriculum. I need not go into that discussion, since it is easily available in the conference report itself.

At the same time, in another section of the conference, there was presented another set of objectives by Principal C. W. Whitten of DeKalb. These objectives were those given in the more or less well known list published several years ago by the N. E. A. Committee on the Reorganization of Secondary Education in Bulletin 35, 1918, entitled "Cardinal Principles of Secondary Education." This list includes seven objectives: Health, Command of the Fundamental

Processes, Worthy Home Membership, Vocation, Citizenship, Worthy Use of Resources and Ethical Character. This announcement of two different sets of objectives to guide us in the work of curriculum readjustment has given rise to more or less confusion, as stated by the Director of the Conference in his address last evening. To my mind, however, the two sets do not seem to be in any real conflict. They are both the result of an examination of the better social tendencies. To me they seem to differ mainly in level. The objectives given by Mr. Sandwick are the more remote, the more general, the more exactly ultimate. Those of the N. E. A. committee are the nearer, the more immediate, the more tangible. They constitute the first product of that process of analysis which Dean Charters mentioned as the second step in this undertaking. So far as I can see, it need make no difference at all which set we adopt. I do realize that the Director of the Conference hopes for a general agreement on this point, and, in fact, for a thorough-going co-operation in all this movement. His conception is a great one, but it is possible that it cannot be fulfilled exactly as he has planned it. He will have accomplished a tremendous thing, I believe, if he is the cause of our adopting individually any modern set of social objectives. The best recommendation that I can give is for all of us to more and more emphasize the need of considering the ends of education in the light of what is good for the race. It has always been the favorite indoor sport of students of education to discover and define objectives of education, but I feel it has been just as characteristic of those of us who have to do the practical work to assent merely to these statements and then to ignore them in our daily practice. The most important thing for us to do is to write these objectives upon our mental tablets in such bold characters that we may not escape them at any moment; that we may be compelled to refer our decisions in regard to curriculum changes to these rather than to such unworthy principles as tradition, academic pressure or mere opportunism.

This general statement and this particular conclusion constitute all that I may assume responsibility for at this time.

Agriculture in the Small High School **A. W. Nolan, University**

With the coming of vocational agriculture, emphasis has been placed recently upon the teaching of vocational agriculture in high schools, probably to the extent of overlooking a type of agricultural instruction not strictly vocational which will continue to exist in the small high schools.

As I have come to regard the whole situation in elementary instruction in agriculture, I see three realms in which such instruction is to function. First, there are the primary and intermediate grades of the public schools, where nature study and geography may properly take care of such natural and instinctive interests as children have in the materials of agriculture. I believe it has been fairly well agreed upon that such an introduction to future agricultural study, as well as to life's adjustment to nature, should be given in the nature study and geography of these grades. In the second place, there is a realm of possible instruction in agricultural subjects advisable for the grammar grades and special high school classes. In this group it may be called pre-vocational or non-vocational agriculture. It is in this realm where agriculture of a profitable sort may be given in the small high school. The content of a course in non-vocational agriculture should be of such introductory and survey nature as to be of general interest to students who will either go on to college or enter some of the vocations not agricultural. Later such students, however, may, by the interest acquired, go into vocational agriculture.

The third realm includes such instruction as is primarily and solely for the purpose of training for the farm. This is the strictly vocational courses such

as are being carried on under the vocational educational act, commonly known as the Smith-Hughes Law. I may say at this point that the small high schools may have, and no doubt many will have, boys who are interested and should enter vocational courses, but it is often not advisable on account of the small number interested, to organize vocational classes in these schools and maintain at high per capita cost such instruction for the few who will take it. It is unfortunate for the individuals who desire such work to be denied the privilege because there are no classes in small high schools. There is a way out, however, under the vocational act, by which such students may take vocational agriculture. Two or more of the small high schools may combine to employ a teacher of vocational agriculture who will give regular instruction periodically in the class room of the small high schools and supervise the farm projects of the boys of all the schools. This plan may be enlarged to include a whole county wide scheme. Knox County, Illinois, has undertaken such a program to provide vocational agriculture for country boys who cannot attend the vocational departments in the larger high schools. The county vocational teacher goes about through the country, gathers up groups of boys here and there, takes them to centers and gives systematic instruction in vocational agriculture throughout the year. The summer farm practice work of all these boys is then supervised by this county teacher. This plan is becoming popular throughout the states. It provides, furthermore, for groups of farm boys who are not in regular attendance in school, short courses under the instruction of the agricultural teacher. With this explanation of how a small high school may come within the field of vocational agriculture, I shall now return to a discussion of the second realm mentioned above in which most of the agricultural instruction in the small high school seems likely to be found.

A one year course is about all I should advise for this instruction. There are several possibilities for content of courses here. One plan would be to provide a general survey course covering the major topics of agriculture, such as *agronomy, animal husbandry, horticulture, farm mechanics, farm management* and general *farm life interests*. These courses should be provided with well worked out laboratory exercises and a liberal quantity of reference material relating to the whole field of agriculture. It would strengthen such a course to require every student to carry on some home project such as *gardening, dairying, poultry, pig raising*, etc. It should be borne in mind throughout this course that its aim is not vocational, but to give general knowledge of, and appreciation for, the problems of the farmer and the place of this large industry in the country's welfare. The course might turn out to be a sort of vocational guidance to those who later would enter the vocational field. It would certainly be a valuable experience for a boy, who might later become a banker or business man, to carry on in connection with such a course a good project in agriculture, even though it be not a large one. The subject matter of the major facts of agriculture mentioned above need not concern itself so much with the solution of problems, manipulative processes and the like, but rather with a discussion of the farmer's problems and some of the basic principles underlying successful farm practices.

Dean Davenport has made valuable contributions in a recent manuscript on an *Introduction to the Study of the Principles and Practices of Farming*, which I believe helps solve very materially the problem of agricultural instruction in this realm we are considering. He shows how agriculture developed from primitive times, how certain animals and crops came to be tamed and cultivated, what are the principal problems of the modern farmer, and where are the most reliable sources of information. Running through it all are some things for the boy to do.

A proper study about farming with a single project thoroughly worked out in all its details and essential connections, by pupils in schools where vocational

agriculture cannot be offered, is probably the best course to follow with agriculture in the small high schools.

Suggested topics for an Introductory Course in Agriculture:

1. The great necessities of life, which agriculture supplies.
2. The development of agriculture.
3. Animals of the farm: what they are, how they came among us and what they mean to us.
4. The crops of the farm: what they are, how they have been developed, and their uses.
5. Problems of the farmer.
6. Helps to good farming.
7. Home projects.

7. THE ENGLISH SECTION

The thirteenth annual meeting of the Illinois Association of Teachers of English convened in the Moot Court Room of the Law Building of the University of Illinois on November 19th at 9:00 a. m. The president of the Association, after calling the meeting to order, spoke informally, emphasizing the idea that better speech week should be expanded into better speech *year*, by means of thoughtful, organized, persistent effort. The objectives to be sought are, first, distinct articulation, to be secured by a refusal to tolerate in class work indistinct speech. The second method of securing such distinctness of utterance is special drill. The second objective is the elimination of gross errors by means of training the tongue and ear. The third objective is to be clearer organization of material, more effective sentences, the enriching of the vocabulary, and the acquiring of a more effective diction.

Upon the conclusion of the president's address, the secretary gave his annual report. The nominating committee, previously appointed, brought in the following nominations: For president, Miss Essie Chamberlain of Oak Park; secretary, E. C. Baldwin of the University; treasurer, Miss Zada Thornsburg of the Urbana High School; and as members of the executive committee Miss Florence Crocker of LaSalle (1923), Miss Nancy Lowry of Alton (1923), Miss Olive Bear of Decatur (1922), and Miss Alma Hamilton of Normal (1922).

The session then proceeded to the reading and discussion of papers, or more precisely, to the reading of papers, for the morning program was again so overcrowded that little discussion was possible. The first formal paper was that of Mr. Hanna of Centralia on Objectives as a Basis for Curriculum Reconstruction. The paper follows:

Objectives as a Basis for Curriculum Reconstruction

L. W. Hanna, Centralia

Two years ago Professor H. A. Hollister, High School visitor and director of the Conference of the University of Illinois, and Dr. W. W. Charters, then dean of the Department of Education, inaugurated the widely cooperative movement of reconstructing the high school curriculum, through the medium of this conference. The plan was to arouse the interest of educators and especially high school teachers and principals throughout the state of Illinois in a scientific

study of the content of our present curriculum. Committees were appointed by all departments of the conference and today the problem is being presented in every department of the conference. At the time the study was launched it was stated that the work of such committees should extend over a period of years. We are now about to start upon the third year and although much has been accomplished in the way of defining and outlining the problem, much remains to be done. One of the greatest hindrances to a study of this kind is the rapidity with which these conferences change personnel. We must be constantly beginning anew if we are to carry with us the teachers who are to administer the curriculum.

Curriculum problems really began when education, which had been only a matter of individual concern, was taken over by the state and especially when attendance at school became compulsory. The life interests of all of those who had leisure and wealth sufficient to be interested in education were to a great extent identical; that is, they lay either in the direction of the leisure occupations or the professions. Nearly all of the formal training of this period when education was an individual matter was in classics or in the fine arts especially from the creative side. Poets, essayists, historians flourished. The universities were concerned with classical learning that the students might imitate or create on their own account. Those agencies which prepared pupils for the university of a necessity prepared for entrance examinations in the classics. Thus secondary education as we have it today grew directly out of the preparatory schools.

Most of you know with what tenacity the High schools have clung to this idea despite the fact that from 75% to 90% of the students did not go on to the university for which they were presumably prepared. As the program of the university was broadened, so the number of subjects in the high school was increased.

Of recent years there has been a demand on the part of the public that a high school program be prepared for those whose formal education ends with the high school. Communities have yielded to this demand and many new subjects have found their way into the curriculum. Some of these subjects have proved to be teachable and have fitted well into our program while others have come and gone. As was stated by one of the speakers of last year, there has been much "curriculum tinkering," but little or no analysis of curriculum needs. I am inclined to think that the school has been doing a great many things very well indeed and has done better than it has been given credit for; well enough to warrant the heavy expenditure that has been placed upon the community. But we have been too little concerned as to whether we were properly keeping pace with the enlarged program and increased complexities of modern life. In the vernacular of the youth of today, "we don't know where we're going, but we're on our way."

Professor A. G. Capps of the University of Illinois in a paper entitled "Technique of Curriculum Construction," before the conference last year presented a method of procedure under seven heads as follows:

1. First, study the life of a man in its social setting and determine the ultimate (major) objectives.
2. Analyze these objectives and continue the analysis until secondary units of workable size are obtained.
3. Arrange these in order of importance.
4. Raise to positions of higher order in this list those objectives which are high in value for children, but low in value for adults.
5. Determine the number of the most important objectives which can be handled in the time allotted to school education after deducting those which can be learned outside of school.

6. The best practices of the race in handling these objectives should be collected.

7. Arrange them in proper sequence according to the psychological nature of children.

It is with the first one of these that we are chiefly concerned now. Let me repeat: "First, study the life of man in its social setting and determine the ultimate (major) objectives." Professor H. C. Morrison of the University of Chicago in addressing the conference on "Objectives as a Basis for Curriculum Construction" spoke in criticism of such a program as follows: "You can't sit down here today and predict the life interests with which the children will be concerned twenty years hence. The world changes too rapidly." This criticism does not hold, however, when we note that Professor Capps' statement contains the words "ultimate" and "major." We can know and do know that the children twenty years hence will be concerned with the production of wealth in an economic sense; with health; with association or the relationship to his fellow men; with beauty with its refining influences. These things are as basic and as universal as are the human emotions. If we cannot tell in advance what the definite life interests of the students will be, we can give them the foundation which will help them to adapt themselves to the specific. But students grow into their life interests. Their immediate interests help to determine their "ultimate ('major') life interests. Many of the boys of our schools are now engaged in agricultural pursuits and will in the immediate future devote all of their working interest to the problem of production. Shall we refuse to help them to adapt themselves to their immediate requirements on the basis that we do not know what will be the methods employed 20 years from now or for fear the boy may find that he may not be interested in farming? It would be a great mistake of course to require all boys and girls to become close students of agriculture to the exclusion of other pursuits and to the exclusion of the classics. But would it be a greater mistake than to require all to study the classics to the exclusion of everything else?

The committee from the administrative section of the conference would express then the following convictions:

1. The retention of any subject in, or its elimination from, the high school curriculum as well as the addition or modification of any subject should be determined by what we may call "major or ultimate life interest objectives."

2. There is no sympathy on the part of this committee for the practice of imposing subjects upon the high school curriculum by enthusiastic specialists or by tradition. Eventually any teacher or principal must justify the subject taught together with the content; as well as the failure to teach other subjects on the basis of these "Life Interest Objectives."

3. The committee agrees that the statement of these objectives at this time is of less importance than the general agreement upon the method of attack upon curriculum construction.

It is the plan of the director of this conference to make this matter of curriculum construction a co-operative one. Committees should merely direct the work. The high schools of the state should become the laboratories for the testing of the work done.

What are our "life interest objectives"? The committee from this conference, of whom Principal R. L. Sandwick is chairman, gives four: Health, wealth, association and beauty. A committee from the National Education Association gives them in Bulletin No. 35 as Health, command of fundamental processes, worthy home membership, vocation, vicic education, worthy use of leisure, and ethical character. You can readily see that these sets of objectives differ only in comprehensiveness.

Have these or any scientific objectives governed the content of our course of study? Your committee from this group last year reported very wisely, I think, that the text book determines to a large extent the composition teaching in Illinois. It might have correctly added also the history teaching, the mathematics teaching and the science teaching, or that of any other subject which has been long in the curriculum. This, after all is said and done, brings the problem of reconstructing the curriculum down to the text book problem and I may add in the case of the English department, to a question of organization. We may then ask the question, "Shall the high school people write the texts?" Educators differ in opinion as to this. Dr. Charles H. Judd of the University of Chicago would answer yes. The committee on social sciences from the N. E. A., of which Dr. Judd is chairman, recommends cooperative text-book making. His committee is directing such a movement and various high schools are engaged in writing from one to five chapters which in every case is to be the result of work in the actual classroom or community. The work is to be correlated by the committee.

Dr. H. O. Rugg of the Lincoln School Columbia University differs with Dr. Judd in this respect. He agrees that the content of the text should grow out of life interest objectives and that the material should all be tried out in the schools through experimental teaching. But he does not believe that high school texts can or will be prepared by the schools themselves. He contends that the duties and burdens of teaching make this impossible. His plan would be that used in the preparation of the Rugg and Clark ninth grade mathematics where two men, one from the school of education and one a teacher in secondary schools, take the whole problem in hand and prepare the material which is later to be tried out and revised in the class rooms of the high schools before it is incorporated in the text book. But that is not our immediate problem. We need first of all to convince the teachers in our schools of the need for curriculum making.

The English department of our high schools has borne a charmed life and has been free from the criticism to which Latin and mathematics have fallen heir. This I think has been unfortunate for the English department, for, shielded as it has been by the word English, despite the fact that many of the most brilliant teachers are to be found in this department, it has become the dumping ground for much of the pedantry of the middle ages and the lodging place for many of the teachers who could not make good in the more exact sciences. The English department of today should be opened to the same criticism and should be amenable to the same changes as the work of the other departments. What would happen if we should remove the requirement of three years of English for every graduate of our high school. I am inclined to think that in a very short time the same exodus would occur which took place in the Latin departments of most of our schools. Many of the methods of vitalizing certain parts of the English composition work suggested by members of your group last year are wholly admirable and are worthy of the genius of the leaders of our profession but the difficulty lies not in the specific devices for vitalizing but in the fact that we are trying to put the breath of life into a defunct carcass that died a natural death some time ago.

One of your group last year suggested that we take the four most widely used texts in composition and from the material of the four books make up a uniform course for all schools. A further suggestion is to the effect that this group should decide on just how many oral and written themes should be required in narration and description, and finally recommend a uniform list of words for spelling compounded from the lists given by the big four, as she terms the four composition texts most widely used. Such a procedure would surely be as far removed as can be from the method proposed by the committee of the administrative section of this conference. We cannot take the materials of tradition and combine them or rearrange them or dress them up and present them as the result of a scientific study of the needs of the pupils with whom

we are working. What are our aims, our objectives? Are we merely looking for standardization? Do we not rather need to do two things? (1) Carefully and painstakingly define the aims of our department in the light of life interest objectives. (2) By experimentation in the laboratory of our own schools find the best methods of bringing these objectives to the pupils as life experiences. May I dare to suggest a mode of procedure: Should not a committee from your group attempt to get together from the English teachers of the state a list of specific objectives for this department; revise and reorganize them; get suggestions and criticisms from the business and professional men and from teachers of other departments of the school. A second committee could have charge of the second part of the problem; that of defining or outlining the experiences needed to reach the objectives. The last committee need not wait for the completion of the work of the committee on objectives as a tentative list of objectives will serve the committee in its initial work. This work can perhaps be done by the present committee divided into two groups or by new committees with the present committee acting in the capacity of a reviewing committee.

May I dare in conclusion to ask this body of harrassed graders of tons of poorly written English themes a few questions or to suggest a few problems that might engage the attention of this group of people who are denied most of the doubtful joys of life indulged in by members of teaching staffs from the other departments. Why English composition? Why themes? Why attempts at journalism on the part of boys who are interested in growing crops or in building houses or selling goods? The teaching of the creative side of English originated when the schools were attended by the gentry; the captains of leisure. Why struggle and worry about subjects for themes? Why bother about distinctions between narration, description, exposition, and argument, a discrimination made and insisted upon no-where outside of the English class-room? Is there any more reason why the study of literature should be tied up with English composition than that history or social sciences should be tied up with it?

Dare I, who have just advocated scientific procedure, suggest in a priori fashion a system that some brave soul in the profession might try, providing he belongs to a staff where every teacher is broad-minded and alive to the need for reorganization?

Place English literature in a department of its own as is the case with music or the fine arts. Have no distinct course in English composition, but provide a brief course, possibly one semester in the mechanics of English in the ninth or tenth grade the materials for the course to be the minimum essentials as determined by a thorough study made by your own group. Provide a supervisor of English with as many assistants as needed to visit the class-room of other departments, to pass upon a sample of oral and written work, which comes in the regular work of the department at given intervals. Provide hospital courses or subsequent courses in the mechanics of English for those who do not live up to prescribed practice in the work of every department.

I am merely suggesting one plan that might be tried. I cannot see why a boy who is thoroughly interested in growing strawberries scientifically and is writing a dissertation upon it to present to his fellow students, should be compelled to write other themes on subjects in which he may or may not be interested in a setting entirely uncongenial to proper thought or good presentation. The best written work and the best oral English of our schools today is not done in the English department but is done in science, in history, in agriculture. It is not the most correct but it represents the true worth of our English teaching.

Following Mr. Hanna's paper came the report of the committee on Curriculum Reconstruction. The report was divided into two sections. The first part, entitled Literary Attitudes and Reactions of Boys and Girls, was presented by Miss Chamberlain of Oak Park. The paper follows:

Literary Attitudes and Reactions of Boys and Girls

Essie Chamberlain, Oak Park

This study is one of comparisons and contrasts. Work on this problem was stimulated by a chance remark of one of our educators, who claimed that we know little about the education of girls, that girls have been placed in a man-made educational system, made for men, that the education of women has been hopelessly bungled. For years, in rather an empirical fashion, I have been interested in the very obvious difference in reactions made by boys and girls in my English classes. In order to study the problem more scientifically, I requested that two freshman classes be segregated in boy and girl groups, and assigned to me. Accordingly, in September, I was assigned two classes, English 1A Boys, and English 1A Girls, reciting the first two periods in the morning. This report will consist first, of a discussion of differences observed in these English classes where boys and girls recite separately, and second, in a study of the reading interests and literary attitudes of one thousand students in the Oak Park High School, of sophomore, junior and senior rank.

For the past two years, our entering freshmen have been divided into A, B, and C groups, based upon the recommendations of the eighth grade teachers. Their judgments are based upon various tests in silent reading, in intelligence, upon school grades, and most potent of all, their judgment of the various abilities revealed after an acquaintance of a year or more. The grouping, as a result, is not scientific, since there are judgments of fifteen or more eighth grade teachers. Groups of A rank were assigned for this experiment, since it was felt that possibly these groups should be more evenly balanced than the B and C groups, and that their literary reactions would be more positive. My experience with B and C groups assigned to me last year showed that the abilities were most unequal, due in some measure at least, to the presence of "Failure" and "Condition" pupils, whom we have always with us.

Only a few days in September were necessary for me to discover that the group of A girls was much stronger as a group than the A boys. When the freshman supervisor of boys was told my judgment of the two groups, we consulted the office records, and found that from 337 entering freshmen girls, 49 were given A rank in English by their grade teachers. From 307 entering freshman boys, 13 were given A rank in English. Four times as many girls as boys were considered superior in English work in the grades. Because of this scarcity of A material among the entering boys, my class, English 1A boys, contains 12 boys of B rank. The supervisor suggested that when the grades came in at the end of seven weeks, I should probably find that these boys were A students in other studies, and that I had a group of the strongest freshman boys in school, rated in general scholarship. Responsive to his suggestion, at the end of seven weeks, I checked the grades of my two groups in all subjects with the following results:

	AA	A	B	C	D	
Boys	1	14	48	28	9	Number in Class, 20
	1%	14%	48%	28%	9%	
Girls	6	40	63	10	1	Number in Class, 24
	5%	33 1/3%	52%	8%	.08%	

63% in Boy Group average B or A in all their work.
37% in Boy Group average below B in all their work.
90.8% in Girl Group average B or A in all their work.
9% in Girl Group average below B in all their work.

How should these figures be interpreted by the teacher of English? It is significant to know that four times as many girls as boys excelled in English according to grade-teacher judgments. Should English teachers accept this as a harmless necessary evil, or meet it as a challenge? In these two classes selected carefully for excellence in English, 90.8% of girls have a general school average of B or A, while only 63% of the boys maintain an average of B or A in general scholarship. It will be recognized that this boy group does not necessarily mean the highest group in general scholarship; it does mean that the group chosen as capable of best English work, by the best judgments of the grade teachers, is not only of much lower rank in English than the girl group, but below the girls in general scholarship. I draw no deductions; I simply tell you how it is with us in Oak Park.

With the end in view of testing literary attitudes and reactions of boys and girls of somewhat equal ranking, that I expected to find in these groups, I had worked out a careful schedule of tests along many lines of English and literature. This program included standard tests in intelligence, in reading, in spelling; it included tests in memory, imagination, appreciation, criticism, curiosity. The inequality of the groups makes this material of little value. Let this brief statement suffice. In the Standardized Tests, Silent Reading, Form 2, the following table shows the results:

	Rate Score—Median	Comprehension Score—Median
Boys	68	28
Girls	78	32

The Rugg-Freeman intelligence tests revealed a corresponding difference. On our 200 minimum spelling list for freshmen, and which each student must pass at 100% before he is given a final grade in English 1, the girls averaged 99.3% on the test after study, while after preparation the boys averaged 96.5%. With no previous preparation the girls averaged 99.3% on the Jones spelling list; under like conditions the boys averaged 96%. The same variation in spelling ability was found in the Starch lists. In grading compositions by our list of minimum essentials, the per cent of error shows the boys lagging hopelessly behind, as do they in oral themes, memory work, interpretation, and appreciation of literature. Especially in the scope of material, and the amount of written and oral work do the girls as a group out pace the boys. Brevity in one's writing is a potent factor if it means terseness and epigrammatic force, but all too frequently the brevity of the boys reveals merely a laxness towards subject matter. They do not plow deep enough. Imagination, easily directed along English channels, do the girls have, nor are they afraid of using it. They revel in beauty of expression, and look upon a fine phrase as did Keats. They take directions much better and follow them out more conscientiously. They ask endless questions, to be sure that they will get the assignment properly. A teacher in a private school writes of the differences she has observed in boy and girl groups thus: "The girls love beauty more even than they enjoy a joke. They admire words. One of them told the other day of being in Rome last spring, of seeing the Pope in all his gorgeousness; she described a hillside sloping to the sea where lemons hung yellow on their little round trees, and loquats grew, and flowers, but you saw nothing but the sea because its blue was so deep, so very deep. They tell of beautiful things better than of anything else, and they like best to read of them. The boys are materialists who have no use for a yesterday whose shadow they can't see on today, and there is no tomorrow, except as they've laid hands on it. *Here and now and us*, that's the one test of interest."

While the boy may lack many of the qualities which the girl possesses, he has much more curiosity, and he is not prone to accept judgment merely because the book says so, or teachers proclaim aloud the saying. The treatment a student theme, descriptive of a cold day, received at the hands of each group

illustrates the difference. The author heaped one chill idea on another in a way which delighted the girls. When the boys heard it, there was little enthusiasm, and five of them, as if truth itself had been assaulted, hastened to point out that it did *not* snow when it was ten degrees below zero. I bowed humbly at superior masculine intelligence; I had not noticed the flagrant error. One of our teachers treasured for years an excellent example of an essay, written by a junior girl, and each year she read it as a sample essay. For years her classes were duly impressed, but this year, in a class composed of twenty-two boys and six girls, male leadership asserted itself, and she learned what she had never suspected, that it was a very poor essay. My boys bring in far more of the actual outside world than do the girls, who enjoy, at least for forty minutes a day, living with fancy and imagination. One of the boys, in describing a hot day, spoke of the pavement becoming soft and yielding, only to be told that that was *only* true when the asphalt was poor, or poorly laid. The observation of this captious critic was founded upon actual experience, for, "Hadh't I noticed," addressing me, "that East avenue paving never got soft, while at Euclid and South Boulevard, where the men had patched it, it always gave on hot days?" Now I live on East Avenue, and cross Euclid and South Boulevard frequently, yet not once had I read this page of scientific lore open at my very feet.

As a check upon my own observations in the differences noted in girl and boy groups, I asked the heads of the Manual Training and Biological Science Departments, the only ones in our school where girls and boys are segregated, what differences were noted in the handling of the two groups. The head of the Science Department said that in science the boys were more careless in written work than girls, that they evinced a greater interest in experiments, were more original, had much more curiosity, were alert to possibilities, that their general information in science was much greater. Doing and action are their pass words. They ask better questions, their interest is more transient, they demand more of the teacher. She epitomized these differences by saying that if a direction was given for heating a test tube, work in science is done in pairs, one would hear Sarah in the girls' group, "Helen, *you* may heat the test tube," while in the boys' group one heard a compelling voice, "Here, let me do that," and a scuffle would follow for the possession of the test tube. The Manual Training head observed in his classes many of the characteristic differences observed in science and English. He finds the girls interested always, busier, more continuously industrious than the boys, capable of asking good questions, but lacking the initiative of meeting unexpected problems. His most striking statement of their divergence, was that one could start a group of boys on work and leave them; in contrast to this, in the class of girls, one must be in the room constantly to give demonstrations and directions, or else the work is checked whenever a new situation arises, for the girl is unable to cope with this.

With the differences observed in segregated classes in English, science and in manual training, one is forced strongly to recognize that these differences do exist, and one must remember, too, that these differences are just as actual in the mixed as in these segregated groups; that it is not good class teaching if the work is stimulating only to half or two-thirds of the class. If this study accomplishes nothing else, it has made me supersensitive to the individual differences in my classes, and while the girl or boy who does satisfactory work, recognized and rewarded by group approval, is a joy forever to me, my chief interest just now centers in the class Sphinxes, those who do not respond to any ordinary class stimulus. In my two freshman sections, because of all the differences pointed out, when the lesson with the girls has been excellent, I yield them credit because of their ability and responsiveness. When in the boys' class the work is keen, stimulating, and absorbing, my own spent feelings whisper that the teacher has been at least a small factor in its success.

To check freshman abilities in English with the upper classmen, I tabulated all A's and AA's given in Freshman, Sophomore, Junior, and Senior English, with this result:

	No. in Class	No. of A's, AA's		No. of A's, AA's	Per Cent of A's, AA's	Per Cent of Students Mak- ing A, AA
Senior	284	63	Boys	22	35%	7.7%
			Girls	41	65%	14.4%
Junior	298	48	Boys	11	23%	3.6%
			Girls	37	77%	12.7%
Sophomore	507	85	Boys	29	35%	5.7%
			Girls	56	65%	11.0%
Freshmen	644	61	Boys	17*	29%	2.6%
			Girls	43	71%	6.6%

*It should be explained here that of the seventeen Freshman boys ranking A, nine came in in February of last year. Of the in-coming Freshman boys, only eight were ranked A in English after seven weeks in high school.

This table means that in the Oak Park High School in the Sophomore and Senior classes the girls make approximately twice as many A's and AA's as do the boys, while in the Freshman and Junior classes three times as many A's and AA's are made by girls as boys.

Will it do to repeat that the English teacher may react variously to these rather commonplace figures? She, I use the pronoun with due discretion, may blink the question by arguing that English merely bridges the chasm between literacy and illiteracy, satisfies the college requirements, and that the boy with shining morning face creeping like a snail unwillingly to his English lesson, is a thing to be accepted as a necessary part of the day's work. Some of us, on the other hand, prefer to accept this as a challenge. We feel that the boy will be a better engineer, chemist, lawyer, if he may be shown the abundant life in the field of English. We who have lived in this field have all confidence in its vital quality. The presence of our Masters in English denies the assertion that English is not for red-blooded men. The problem, then, is one of curriculum and methods. This paper will consider only the question of the curriculum. What, then, are the things to consider in shaping a curriculum that will hold the interest of our Oak Park boys as well as our girls, and yield from them the tribute gained from the girls?

With the purpose of finding out the literary interests of our Oak Park students, twelve questions were submitted to sophomores, juniors, and seniors. Freshmen, as well, answered the first nine; their judgments, however, will not be used in this paper. Mimeographed sheets were passed out to each student in our period set apart for study, the pupils having been told previously that part of their period would be used. They were asked to answer questions carefully, to treat the assignment as a serious one, and the questions were, with few exceptions, carefully filled in.

The first question asked pupils to name three books read in the grade school class room with enjoyment, and to explain the liking. Let me state here that the attempts to analyze reasons for likes and dislikes in books were for the most part inadequate, and very little use of reasons for likes and dislikes in reading will be used. It might be well to be more specific in our teaching, by tying together the more or less scattered impressions on any book or poem and teach the pupil how to analyze his impressions of the qualities of a piece of literature. Summaries of these questions, too, must be brief for this report. The senior boys named 62 titles with 207 counts, the senior girls 62 titles with 313 counts. The following table shows the books read in class most frequently mentioned. The difference of counts of girls and boys may be because the girls were more conscientious in recalling this early reading.

Name of Book	Boys	Girls
Tale of Two Cities	27	38
A Christmas Carol	13	41
Cricket on the Hearth	11	20
Merchant of Venice	17	23
Evangeline	11	23
Treasure Island	14	15
Old Curiosity Shop	0	14
Ichabod Crane	1	19
Miles Standish	3	8
Robin Hood	10	9
Lady of the Lake	6	7
King Arthur	8	9

On sophomore and junior tables, one finds the same books mentioned, so this list is the core of study books in the grades, remembered pleasantly by boys and girls. For example, of the thirteen titles mentioned ten or more times by sophomore boys, only two are not on the list above, Ivanhoe, and Julius Caesar. The strong preference that both boys and girls express for these books shows, of course, that we have a large body of literature with universal appeal.

Questions II, III, and IV relate largely to outside reading. Endless titles are given, ranging from high-highbrow to low-lowbrow, but again within this great fringe is found a comparatively small group mentioned many, many times, The Call of the Wild, Tom Sawyer, Huckleberry Finn, The Last of the Mohicans, A Tale of Two Cities, Penrod, Treasure Island, Sherlock Holmes, Anne of Green Gables, Little Women. The lesson one might point from the tendencies evidenced in these answers is a need for intelligent supervision of outside reading. The plan used by certain schools, of having large cards for recording books and the students' impression of them has obvious merits, for from the early grades the pupil is required to list his book, author, and a statement adapted to his age, of his interest in the book. Any teacher may know the directed reading background of pupils when they come to her. If more English teachers read the books on our various lists with the purpose of analyzing the appeal they contain for the boy or girl of various interests, a real service would be done to the outside reading problem. Our High School Librarian generously compiled the information on the first four questions. Her judgment was that the answers revealed a need for guidance and system in outside reading, that the proper grading of book lists was necessary, since so many, in explaining a dislike for a certain book, added that they were too young when they tried to read the book. She feels that the results yield a great tribute to Dickens and wonders why more students do not mention Kipling. Regret for this omission is assuaged, however, by the heavy vote against Elsie Dinsmore. The variations in tastes of boys and girls are shown in a few books, but the most significant fact gleaned is in the wide appeal a few books have for both groups.

The question which seeks to find High School interests in magazines reveals the following: girls read more, boys are more catholic in their tastes, their range in magazine reading is much wider. All read for relaxation and enjoyment, even as you and I, and the following table will reveal the taste of the majority. Are our pupils reading, on the whole, the magazines they should, or, with their advantages, are they below grade? You are the tribunal. The 25 magazines are arranged in order of their popularity. The American (320), Saturday Evening Post (237), Literary Digest (206), Independent (201), lead in total mentions. Seven of the 25 are distinctly magazines for boys, and four for girls. In rather systematic class room work, our English and History departments have done magazine work, and the votes for the Digest, Independent, and Atlantic Monthly are largely traceable to this.

TABLE A

Magazine	Girls	Boys	Total
American	178	142	320
Saturday Evening Post	115	122	237
Literary Digest	97	107	206
Independent	119	82	201
Popular Mechanics	25	110	135
Ladies' Home Journal	126	8	134
National Geographic	74	60	134
American Boy	9	92	101
Woman's Home Companion	97		97
Atlantic	47	15	62
Cosmopolitan	22	35	57
Good Housekeeping	41	3	44
Red Book	11	28	39
Popular Science	1	36	37
Boys' Life		28	28
Pictorial Review	26		26
Scientific American		26	26
Youth's Companion	14	10	24
Harper's	18	3	21
Radio News		20	20
St. Nicholas	18		18
Science and Invention		15	15
Moving Picture	9	3	15
Life	12	3	15
World's Work	7	4	11

In question VI, "Do you like poetry?" from 880 students answering, 433 were boys, and 447 were girls. The table below is explanatory. From the 433 boys, 167 voted for, and 171 against, while 95 were most cautious and wary in committing themselves, a "fifty-fifty" expression of tolerance. From the 447 girls answering, 319 voted for, 66 against, and 62 qualified their enjoyment by certain stipulations.

38% of our boys in English II, III, IV enjoy poetry; 40% dislike it.

71% of our girls in English II, III, IV enjoy poetry; 15% dislike it.

	BOYS				GIRLS			
	Yes	No	"50-50"	Total	Yes	No	"50-50"	Total
Sophomore	79	88	31	198	137	34	26	197
Junior	43	40	37	120	85	13	21	119
Senior	45	43	27	115	97	19	15	131
Total	167	171	95	433	319	66	62	447

These figures provoke questions. Have we in the Oak Park High School chosen subject matter more interesting to girls than boys? Have we taught it in a way that prejudices at least half the boys? Are we with complacent air, to decide that poetry is for girls, and not expect to make boys enjoy it? Are these reactions unique in Oak Park?

The reasons for their likes and dislikes are pregnant with suggestion. These will be analyzed, and in my classes at least, an attempt made to clear up certain errors in judgments. The sophomore answers show an inability to analyze reasons. Those who like poetry do so for the rhythm, power of imagination, pictorial power, moral values. One boy finds it "a safety valve for fiction," another speaks for many when he says, "It makes me feel good." Still another cares only for "the rough and ready kind," naming Riley and Service, "Nine Little Goblins" and "The Yukon Egg" as collateral. "If it's humorous," or, "If it has the narrative element" bears many repetitions. One who loves poetry is grieved to find these recurring, "Read few poems," "Dislike all poems." All too many boys find the meaning difficult or impossible to discover, that there is no life in poetry. "The hard way the verbs and subjects are arranged," is a very honest protest, and this prejudice probably came from studying "The Idylls." Co-operation between the school and home is assured by one who says, "Yes, mother makes me." The most common impression gathered from all

these protests is that the meaning is difficult to get, and that it is tiresome. The conservative who takes no chances speaks in this, "No, if one line is good, the next is bad." The materialists claim it "useless in after life." Our undisputed authority totters with this, "Unable to find the beauty which teachers *claim* they contain." At present indications, half of our boys will not be able to read even the first and last lines of "Sordello" with understanding. A love for poetry must be fostered in early life, and if we fail to stimulate the boy in high school, the chances are that he will go through life with this pleasureable way of filling in leisure time withheld.

The next two questions asking for poems enjoyed or disliked will be treated together. While the range of the loved ones is wide, comparatively few authors are given many votes, and these few are for the most part our American poets. It is as if our students had said with their beloved Longfellow, "Not from the grand old masters," for one finds, out of all proportion with the others, Longfellow, Poe, Whittier, Lowell, Holmes. Answers to these questions are in part a tribute to the memory work required by our department, for "The Highwayman," "Unconquered," "In Flanders Fields," etc., are often mentioned. Whether the recall is from mere memory, or from a love of the poem, is not so important, as the fact that we are giving them certain touchstones, by which they may test other poems. Many did not list poems they disliked. In this list are found titles given in the list of enjoyed poems, as "The Raven," "Ancient Mariner," which means that often the lesson is successful to part of the class only.

The listing of the various school subjects in order of preference has much local interest; its only value to this paper lies in the fact that twice as many girls as boys placed English first in interest.

	Choice	1	2	3	4	5
Boys	83	106	120	82	15
Girls	162	121	88	31	6

Doubtless the personality of the teacher determines in large measure the rating, but since boys and girls are quite equally divided among our fourteen teachers, this objection does not nullify these likes.

Probably the information of most immediate value to us in Oak Park, is the record of likes and dislikes recorded on the classics we teach in the high school. The following tables show the attitude our students have towards actual class study of these selections. In the freshman year boys and girls both, enjoy *Ivanhoe*, *Christmas Carol*, and *The Idylls*. The *Oregon Trail* is the book enjoyed least, although boys mention it three times as often as girls. The *Autobiography* appeals to boys more than to girls, but receives scant enthusiasm.

The books we use in English I follow in order of the total of first, second, and third choices: *Ivanhoe* (751), *Christmas Carol* (506), *The Idylls* (416), *Ancient Mariner* (282), *The Autobiography* (280), *Old Testament Narratives* (181), *Oregon Trail* (144). When asked to name the ones least enjoyed from the group, the order is reversed. (See Table B.) The comments on *The Oregon Trail* are amusing. One finds frequently, "Too much rain," or the contradictory statement, "Dry, too much rain." One girl expressed her dislike thus, "The whole thing seemed to consist and revolve around rain, buffaloes, and mud." While there is not time to discuss the student judgments on our sophomore and junior books, one finds the same results. First, some selections have wide appeal to both groups, some which appeal to girls do not reach boys, and some, either because of subject matter, handling, or wrong placing, neither group like. *David Copperfield*, *Silas Marner*, *The Rise of Silas Lapham*, and *The Alhambra* are most enjoyed in our Sophomore year, while Emerson's essays are least enjoyed, probably because the work is too heavy for second year pupils.

TABLE B
BOOKS MOST DISLIKED IN COURSE

English I—	BOYS				GIRLS			
	Soph.	Jun.	Sen.	Total	Soph.	Jun.	Sen.	Total
Ancient Mariner	12	4	11	27	13	7	19	39
Oregon Trail	24	41	16	81	31	69	17	117
Christmas Carol	9	6	7	22	4	1	3	8
Ivanhoe	6	3	3	12	5	2	6	13
The Autobiography	35	15	28	78	70	25	42	137
Idylls of the King	26	14	9	49	15	6	9	30
Old Testament Narratives..	35	25	25	85	14	5	12	31
English II—								
David Copperfield	2	12	14	..	1	5	6	6
As You Like It	32	17	49	..	16	9	25	25
Silas Marner	3	5	8	..	5	8	13	13
Midsummer Night's Dream ..	2	7	9	..	3	2	5	5
De Coverley Papers	1	8	9	..	3	2	5	5
Rise of Silas Lapham	1	11	12	..	1	11	12	12
Alhambra	8	15	23	..	12	18	30	30
Uncle Tom's Cabin	11	8	19	..	2	9	11	11
Twelfth Night	1	1	2	..	0	1	1	1
Emerson Essays	34	30	64	..	41	48	89	89

TABLE C

NAME OF BOOK	BOYS				GIRLS				Total Number of Mentions
	1st	Order of Choice 2nd	3rd	Total	1st	Order of Choice 2nd	3rd	Total	
Ancient Mariner									
Sophomore	23	9	22	54	18	15	7	40	
Junior	12	11	10	33	9	9	7	25	
Senior	25	23	21	69	17	17	27	61	
Total	60	43	53	156	44	41	41	126	282
Oregon Trail									
Sophomore	17	13	12	42	5	3	8	16	
Junior	17	15	12	44	4	1	6	11	
Senior	7	8	6	21	4	3	3	10	
Total	41	36	30	107	13	7	17	37	144
Christmas Carol									
Sophomore	30	47	15	92	52	53	29	134	
Junior	10	28	20	58	28	32	19	79	
Senior	14	20	19	53	29	46	15	90	
Total	54	95	54	203	109	131	63	303	506
Ivanhoe									
Sophomore	107	43	20	170	103	39	26	168	
Junior	73	19	14	106	58	30	11	99	
Senior	60	25	11	96	71	29	14	114	
Total	240	87	45	372	232	98	51	381	751
Autobiography									
Sophomore	8	40	42	90	5	13	27	45	
Junior	8	20	29	57	3	12	19	34	
Senior	3	4	23	30	2	6	16	24	
Total	19	64	94	177	10	31	62	103	280
Idylls of the King									
Sophomore	6	29	30	65	13	53	46	112	
Junior	3	22	25	50	12	21	29	62	
Senior	13	26	19	58	11	24	34	69	
Total	22	77	74	173	36	98	109	243	416
Old Testament Narratives									
Sophomore	1	5	32	38	1	14	39	54	
Junior	3	5	11	19	5	9	16	30	
Senior	2	5	8	15	2	7	16	25	
Total	6	15	51	72	8	30	71	109	181

Let it be understood that I do not wish to imply that pupils' likes and dislikes should be the basis in reconstructing our course in English, but surely it is an element to be considered. The judgments of our students have rather generally tended towards the greatest pieces of literature, and passed by those of mediocre merit, such as *The Oregon Trail*. Surely one should be able to find in our field, selections which yield both profit and enjoyment, recognized by students themselves. That their judgment is not wholly biased by the easy thing, is shown by answers to the twelfth question, where they were asked to name the parts of each year of English of most value to them, for compositions, oral and written, the formal work in grammar, spelling and punctuation, are mentioned most frequently side by side with cultivating a taste for wider reading.

The disparity between the boys and girls of highest rank in English of my English 1A Boys and 1A Girls, both in English and general scholarship; the fact that our freshman and junior girls earn three times as many A's in English as do the boys, while the sophomore and senior boys earn only half as many A's as do the girls; that rather striking differences in boy and girl reactions are seen in science and manual training, leads to what conclusions? The difference, too, in boy and girl likes and dislikes, as shown by the question sheet, may suggest what conclusions? First, the recognition on our part of these individual differences, a constant awareness to them, whether the class is segregated or not, and an attempt to meet this need intelligently and scientifically, is demanded of us. Second, intelligent and earnest work by the individual teacher or department, in cooperation with the librarian, on a graded reading list, suitable to the community and meeting the individual needs of the boy or girl of various abilities in reading, is a thing much needed. Third, because half of our boys place themselves on record as not liking poetry, is a potent reason why we should seek to find out if this situation may be changed. I have told you how it is with us in Oak Park. May I hope that this very frank portrayal of our situation may induce some of you to investigate the interests of your boys and girls. How is it with you?

The second part of the report, dealing with Error Elimination, was presented by Miss Wilcox of Springfield. The paper is here reproduced.

Error Elimination **Susan Wilcox, Springfield**

I wish my subject was a more fascinating one. Following on Miss Chamberlain's interesting theme, I fear that it will be very dull. Then when I remember that I chose it myself, I wonder at my temerity. Most of us feel that this subject, the elimination of errors, though vital, is a deadly bore, and the tedium attendant on it is heightened by a feeling of resentment. Every English teacher knows that if those who had the first chance at his pupils had done their work, his lot would be an easier one. The high school teachers who are responsible for beginning classes wail of shortcomings that should have vanished in the sixth grade; those who work with the Juniors and Seniors wonder that many of their charges ever got through the passing gate, and teachers of Freshmen in college wail loudest of all over the great gaps in the Freshman's knowledge concerning the simple mechanics of composition. Mutual protests and criminations are vain. We know, too, that any drastic standard held to unswervingly in a high school would result in more failures than are provided for in the 5% on that ideal curve of ideal grading and would bring down on our devoted heads the wrath of the powers that be and the opprobrium of the parents' association. No, we can't afford it; our need of our munificent salaries and the prospect of that generous pension that dangles before our eyes forbid. No, we must leave to the colleges the enforcement of such an effective Draconian code.

We are sure that we cannot make all perfect even in the simple requirements of the minimum essentials for which this association stands sponsor. Had we the time and strength to see that every paper was rewritten till it was perfect in its mechanics, I fear that in the next test in history or science some of the old errors would crop out. We can compel the pupil to correct his mistakes and give reasons for the corrections, but I doubt the possibility of filling him with any zeal for such labor. I recently read of a class that made corrections with such avidity that it was a pleasure to see them eat out of the teacher's hand. This class is not found in the Springfield high school.

If we find it is impossible to bring every pupil to perfection, and that even our minimum standard must be interpreted as the church does the Christian ideal, "Be ye perfect," what then shall be called a reasonable attainment for each semester in the English course? We cannot base a passing grade in composition on this one part of our work; that would be to keep the letter and kill the spirit. To find a happy mean is as difficult as to combine self-seeking and altruism in the proper proportions to get through this world successfully.

It was our failure in Springfield in bringing all to the desired minimum and the impossibility of shifting all the delinquents into one class for further drill that led the English department to embark on the experiment that I am going to tell you of. We decided to find out to what degree we had succeeded or failed and where we should draw the line between success and failure in attaining a simple standard of minimum correctness in the mechanics of composition. We decided to give a test to every pupil in the department. The English faculty made a scale for error-deduction and agreed to use it in marking the papers. I have brought some copies with me, not because I think they are models, but because with them you may be able to follow our little experiment more easily. The test was given at the end of the first seven weeks of school in this semester. The examinations were made equal in difficulty for all classes in the same semester's work. If we were to get a real estimate of a pupil's skill in using the mechanics of composition, the test would have to include at least all the kinds of writing he had been required to do in these weeks. We grew ambitious and decided that we would make it a test also of content, and of speed and comprehension in sight reading. This very variety we argued would be a fair basis for the first object, and at the same time enable us to kill these other birds by making the stone big enough.

Each examination was made up of four divisions; the first required that knowledge gained in literature should be applied in some form of composition which the pupils had been studying. Let me illustrate. The beginning Freshmen in literature had just finished reading "Kidnapped," and in composition had been writing themes that took up a subject from two points of view; so their first question ran thus: From the point of view of Ebenezer Balfour tell of David's arrival at the House of Shaws; then tell of David's arrival as David would have told it. For beginning Sophomores, who had been reading Silas Marner, and in composition writing different kinds of news articles, the first question ran thus: Write for the evening paper a news story of 150-200 words on "The Death of Molly, or Silas's Trial at Lantern Yard."

The second division tried to test the power of judgment. To make this a real test of judgment and not of mere memory all class discussions involving this had to be ruled out of the test and something new provided. The beginning Juniors, who have a course in American literature, were asked to select three great contributions of Cooper to our literature and to point these out by reference to some work of Cooper that they had read. The mid-year Juniors were asked to state Burns' attitude on these: animals, poverty versus wealth, religion, home and love, and to substantiate their statements by reference to his poems.

The third part was intended to test the pupils' appreciation of moral or of aesthetic ideals. We realize that our work here, especially on testing aesthetic

appreciation, is very crude. But I will give you some of our attempts. We asked the mid-year Sophomores, who were studying "Julius Cæsar," to point out those characteristics in Portia which make us admire her. We asked the beginning Juniors to quote a poem that they had committed, and to point out in this poem five claims of Bryant's poetry to beauty.

The fourth section of the examination was a sight reading test to find their power of comprehension and the number of words that each could read in one minute. For this all in the same semester's work read for exactly five minutes in the same assignment, and at the end of that time marked the last word read and counted up the number of words read on the page with this and recorded it on his test paper. From this information we were able to calculate his speed per minute. Then each continued his reading for five minutes more and closed his book. He then had ten minutes to answer the questions that were to test his power of comprehending what he had read.

The papers were first marked for content; all the mechanical errors were ignored. A perfect content grade for the first question, the composition, was 35%; for the judgment question, 25%; for the test on aesthetic or moral appreciation, 15%. The small amount assigned to this third question must not be taken as the index to the value we set on this third, but rather as a confession of the difficulty of really testing this. The sight reading, the fourth, gave the rate, and comprehension; the comprehension was marked on a scale of 1-25%. The total of these four gave the content grade.

You will see that when we came to find the degree of mechanical accuracy we had enough variety of material to show what a pupil could do. Each one at the end of the examination was asked to count the words he had written and put the number at the head of the first page. Each paper was read a second time and all the mistakes listed on our scale were marked and the amount to be deducted found. Let us suppose that this was 20 for one pupil's paper and that he had written 425 words in all, i. e., eight and a half fifties. The deduction to be made for every fifty words would be found by dividing 20 by 8½. The quotient is 2 and 6/17, approximately 2½. For a hundred words the deduction would be twice 2½, or 5. Representing by 100% the grade for a paper without a single error, the grade for mechanical correctness for the paper under discussion would be 100 minus 5, or 95%, or approximately this pupil makes 2½ mistakes per hundred words. If we had confined our test entirely to finding this grade, we should have had time to calculate the frequency of the different errors.

For the papers of each semester's work we found the median in content, in mechanical accuracy per hundred words, in rate at sight reading, and in comprehension of what was read. I will give you our results on the second of these. Please bear in mind that this is limited to the errors listed on the scale.

For the lower ninth grade the number of pupils tested was 377 and their median was 85-89; upper ninth, 178 pupils, median 90-94; lower tenth, 268 pupils, median 90-94; upper 10th, 121 pupils, median 90-94; lower 11th, pupils 172, median 90-94; upper 11th, 88 pupils, median 90-94; lower 12th, 15 pupils, median 95-99.

What did we learn from this part of our test? First, that our Freshmen were not as ignorant and careless as we had been prone to think; second, that in the following five semesters we had not succeeded in increasing their knowledge and accuracy in these mechanical details. I shall not take into account the median of the beginning Seniors, since only one class took the test, and this year is elective.

We have found many subjects for fruitful thought. We can compare our different classes and the work of the different semesters. In general we know where we are according to our own scale, our own test, our own marking. But our position is something like that of a ship at sea trying to sail by a compass

that has never been adjusted to the shifting of the magnetic pole, by a chart limited to a knowledge of the earth gained through very limited voyaging, and a chronometer that has never been compared with any standard time. We do not know just where we are. We have no means of knowing whether these results are creditable or not. Only by comparison with the results attained by other schools could we really measure ourselves. Why should not this association agree upon some scale for marking mechanical errors and apply this in a series of short tests, such as a dictation exercise and an original paragraph of 150-200 words and pool our results. Listen to our Macedonian cry and come over and help us make a standard. I am emboldened by a great need to commend this subject to the executive committee of this association.

Mr. A. W. Clevenger of the University then read a paper giving the results of an investigation carried on through the office of the University High School Visitor. The paper is here printed.

Results of Testing English Compositions in Illinois High Schools

A. W. Clevenger, University

Do you know how well the pupils in your school can express themselves in written English? Do they write better or worse than pupils enrolled in schools similar to your own? What is the standard quality of English composition which we can reasonably expect our pupils to attain?

It was for the purpose of answering these and many similar questions that the High School Visitor's Department undertook to measure the quality of English composition in the senior classess of the accredited high schools and academies of Illinois.

Have you ever tried to measure the quality of your own instruction or the quality of instruction of the teachers in your school? Do you believe in the scientific measurement of educational products?

Many of the familiar and most important experiences of our lives have to do with some very common thing like the falling of bodies. And yet, how little we really knew about gravity until scientific experimentation came to our aid and determined the laws of gravitation! We can almost see the skeptical looks and hear the derisive remarks of the small group of professors and scientific men which gathered to watch the young scientist, Galileo, climb to the top of the Leaning Tower of Pisa to perform the first of his famous experiments on falling bodies. Previous to this time (1590) it had been taught in the schools that bodies fall with velocities proportional to their weights. And yet, at even that advanced era, when the two unequal weights let fall by Galileo struck the ground before the observer at the same time, these very learned scientists could not believe what they saw and they retreated to their studies to belittle the endeavor of the youthful experimenter. But the modern era of scientific experiment had begun!

During the past fifty years, and more especially during the past ten years, scientific measurement has entered the field of education and we are measuring the products of our instruction. In this field, as in the field of science, the first attempts to make use of scientific method met with derision. At last, however, we are beginning to learn that to teach efficiently means that we must know what we have already taught. How else can we know what we must teach?

What have we taught our pupils in regard to the expression of their ideas by means of written English?

The method employed by the High School Visitor's Department in making a study of the achievement of the pupils of the senior classes of the secondary schools of Illinois was briefly as follows:

Under definite and uniform instructions the members of the senior classes of the accredited high schools and academies of Illinois outside of Chicago were asked to write English compositions on some subject suggested by the title, "An Afternoon Off." During the week of March 22-26, 1920, three hundred and five high schools and academies complied with the instructions as given and submitted their compositions to the High School Visitor's Department for the purpose of being scored. After the compositions were collected, each was stamped with a code number indicating the school in which it was written and each composition was given an individual number. Thus the identity of the school was lost and the compositions were ready for scoring.

Members of the High School Visitor's Department and students in the School of Education of the University of Illinois under the direction of a member of the High School Visitor's Department, and members of the Faculty of the School of Education were engaged in scoring the compositions. The scorers after having received instructions in regard to rating the compositions worked in groups of three in order that each composition might be given a value which represented the combined judgment of three persons.

The Nassau County Supplement to the Hillegas Scale for measuring the merit of English compositions was used as a basis for scoring. This scale consists of a series of ten compositions arranged one below another in the order of their merit. The scale represents ten practically equal steps in merit, ranging from a composition so poor in quality that it is almost unintelligible to a composition possessing very high literary value.

The compositions were read for general merit. The quality of each composition was compared with the quality of the samples on the scale and each composition assigned the numerical value of that evaluated sample which most nearly equaled it in merit. One of the very interesting features of the scoring of the compositions was the small amount of difference in the values assigned to the same composition by each of the judges who were working independently of each other.

When the compositions had been scored the frequencies of each value were entered in the table of values for the compositions which compose the Nassau County Supplement to the Hillegas Scale and the median scores were computed. The median score is one of the most commonly used terms which expresses the degree of success attained by a number of individuals. It is that point in the distribution below which one-half the scores fall and above which the other half are rated.

How well did the "Seniors" of the schools of Illinois write? A study of the scores made by the seven thousand two hundred forty-seven "Seniors" whose compositions were submitted showed that there existed a very wide range in the quality of the compositions. This range extended from the type of a composition which possesses almost no merit to the type which possesses high literary value. There were 16 "Seniors" who wrote compositions rated at 2.8. The sample on the Nassau County Supplement Scale, which is rated at 2.8, is as follows:

Once a pon a time there was a girl. One day she asked me what I was going to do next Saturday so I said, "I am going to go for a swim." And she said, thats just where I am going to." Next Saturday came we both went down together. We came home at noon time. after dinner we went to the picktures. There we had a good time. And then came home at night.

There were 116 "Seniors" who wrote composition rated at 3.8. A sample of this quality as shown on the Nassau County Supplement Scale is as follows:

I would like to go out in the after noon and play catching the ball. Go over to Bertha's house and have a few girls to come with me and be on each others side. I have a tennis ball to play with. The game is that one person should stand quite aways from another person and throw the ball too one then another. Someone has to be in the middle and try too get the ball a way from someone then she takes this persons place who she caught the ball from. Then till every person has a chance.

There were 750 "Seniors" who wrote compositions which were rated at 5.0. The sample on the Nassau County Supplement Scale which has this value is as follows:

Next Saturday I should like to go away and have a good time on a farm. I should like to watch the men plowing the fields and planting corn, wheat, and oats and other things planted on farms.

Next Saturday I will go to the Pioneer meeting if nothing happens so that I cannot go. I should like to go swimming but it is not warm enough and I would catch a bad cold. I should like to go to my aunts and drive the horses, I do not drive without some older person with me, so I cannot go often.

I should like to see my aunts cat and her kittens, too. I think I can, to.

There were 3,323 "Seniors" who wrote compositions rated at 6.0, a quality represented on the Nassau County Supplement Scale by the following sample:

I should like to join my girl friends, who are going to the city on the 9-05 A. M. train. They are going shopping in the morning and will have lunch together, then they are going to the Hippodrome. After the Hippodrome, they are all going home to dinner to one of the girls houses, she lives on Riverside Drive so they expect to take the "Fifth Avenue Bus" up there. The evening will be devoted to playing games, singing and dancing.

There were 2,449 "Seniors" whose compositions were rated at 7.2. This quality is expressed on the Nassau County Scale by the following composition:

If I had a thousand dollars to spend, I think I would take a trip to San Francisco by train with the rest of the family, and stop at a sea-side hotel. It would be glorious to see the surf again, and to escape from the cold blustering weather of December for the balmy breezes of the ocean, and the whiff of orange blossoms.

We could take long drives under shady trees, visit the orange and olive groves and bathe in the surf. Think of bathing in the ocean in December!

Coming home again I should enjoy stopping at Yellow Stone Park. It would be lots of fun to camp out, and to ride over the prairies on frisky ponies. It would be very interesting to notice the change of climate as we go farther east, and to go to bed on the train one evening feeling warm, and waking up the next morning feeling very chilly.

I am afraid by the time I would get home a thousand dollars would be pretty well used up; if not I would like to give a party.

There were 551 "Seniors" whose compositions were rated at 8.0. This quality is represented on the Nassau County Supplement Scale by the following sample composition:

One Sunday, towards the end of my summer vacation, I was bathing at the Parkway Baths. In the Brighton Beach Motordome, a few rods away, an aviation meet was going on. Several times one of the droning machines had gone whirring over our heads, so that when the buzzing exhaust of a flier was heard it did not cause very much comment. Soon, however, the white planes of "Tom" Sopwith's Wright machine were seen glimmering above the grandstand. Everyone stood spellbound as he circled the track several times and then headed out to sea. He was seen to have a passenger with him. Suddenly, the regular hum of his motor was broken by severe pops, and the engine ran slower, missing fire badly. In response to Sopwith's movements, the big flier tilted and swooped down to the beach from aloft like an eagle. The terrified crowd made a rush to get out of the way as the airship came on, but Sopwith could not land on the beach, but skimmed along close to the water instead. Suddenly his wing caught the water, and the big machine somersaulted and sank beneath the waves. The aviators soon came bobbling up and were taken away in a launch, but the accident will not be soon forgotten by those who saw it.

There were forty-two "Seniors" whose compositions were rated at Value 9.0. One of the best of the compositions possessing this quality was that written by Miss Margaret Rabe, Proviso Township High School, Maywood. Her composition is submitted instead of the sample composition rated at Value 9.0 on the Nassau County Supplement Scale.

An Afternoon Off
 "When the lazy breeze
 Makes a nest in the trees,
 And murmurs a lullaby;
 It is July."

It is July. Wednesday is my afternoon off during this month, and I linger as I leave the office. Shall it be the park or the forest today? The light breeze blows the tiny cloud of white away and the deep blue of heaven calls. Parks are made beautiful by man, July beckons to nature's kingdom, and I seek the forest.

Enter the woods with me! At first the trees are far apart and brown fields abound, where the music of the grasshopper and his chorus are playing. Somewhere the lazy brook is heard and a glimpse of the river's blue shows. It is pleasant to linger here but yet, far away a bird is singing in the depths of the forest and a dragon fly flits across the path. I go on.

Deeper, deeper into nature's heart the winding road leads me. Road? No, not now, but a mere path. The dark green enfolds and meets in a long emerald archway over it. Here is an opening and the river glides into view.

Come and sit by its side with me. A cardinal flies across its waters, and its sleepy song lulls one to slumber. The sky is seen no more, the birds sing in the distance, the forest of green recedes, and I sink in the deep shade lost in dreams and reverie.

What I know is that sweet poetry of my half conscious slumber is too beautiful, to intimate to tell. It is nature whispering her love in the mistic month of summer.

A damp feeling descends! What, is the river hurrying faster than before! I am awake. A glance at my watch tells the hour of early evening. It is time to go.

The median score of all the compositions submitted by the high schools and academies of Illinois was 6.42. How does this score compare with that attained by the pupils of other school systems? Fortunately we now have a number of schools in which similar tests have been made. A comparison of the median scores made by the several school systems is interesting.

School System	Freshman	Median Score Attained			Senior
		Sophomore	Junior		
Fifty-four High Schools*	4.99	5.88	6.38		6.69
Gary, Indiana**	4.69	5.62	6.42		6.22
Mobile, Alabama	6.69	6.93	7.24		7.54
Mobile County, Alabama	5.56	6.38	6.05		6.77
Nassau County, N. Y.	5.00	5.25	5.68		5.94
South River, N. J.	5.18	5.02	5.95		6.30
Illinois (305 High Schools)					6.42
Trabue Tentative Standard	6.00	6.50	6.90		7.20

A study of the attainments of the various schools in English composition as indicated by the median scores shows that there exists a very wide range in the quality of the compositions submitted by different schools. Does the fact that your school made a median score of only 5.4 mean that you are a poor teacher, that you have a poor principal and that every member of the faculty should be asked to resign? Not at all. Neither does the fact that your school made the very excellent score of 7.3 prove that you are an excellent teacher and that your salary ought to be raised. A low score does not show the reasons why such a score was made. There are many factors which enter into the testing of pupils and each of these factors plays its part in the determination of the pupil's mark. One must know more than simply the results of a test before he can make conclusions and suggest remedies. A low score in English composition, as a low mark in any subject, simply indicates that some condition or trouble exists which should be removed. It is clearly the duty of the teacher and those responsible for efficient instruction to ascertain why a low score was made. When once the trouble has been located much has been done toward its correction.

A careful analytical study of many compositions selected at random from the total number submitted showed that there were a comparatively few things which detracted most from the merit of these compositions. Over two-thirds of the pupils failed to make introductions that excite any interest whatever in the reader. Obviously they had not been taught the value of brief and interesting introductions, nor the value of little details that appeal to the senses; a flash of color, the honk of a horn, the odor of cooking food, the sight of a wisp of smoke, a song, a whisper, details that add vitality and color to the story. Many of the compositions lacked a climax. The pupil apparently did not know how to emphasize important points of the story. Climaxes were often tucked away in subordinate clauses of straggling sentences. Evidently the student desired to make a climax, but did not understand the means, the use of short quick sentences for quick action, the placing of effective details, and the success of surprises. Too often the composition was simply a chronological statement

of events. One of the most noticeable failures in the compositions studied was attempts at humor. This is perhaps the most attractive asset of a composition as well as the most attractive asset of a person. Most people have a sense of humor. How few know how to express it successfully! In this study only six out of every hundred pupils attempted humor in their compositions and in practically every case the attempt fell flat or savored of insolence. Unnecessary words and details clog a composition. In many of these compositions the first three paragraphs could have been reduced to a single sentence with far greater effect. The elimination of a few common errors and the correction of a few faulty habits will do much toward increasing the merit of the compositions of a class. The teacher can well afford to take the necessary time to make an analytical study of the compositions written by her pupils in order that she may determine what errors to correct. It is a waste of time to correct errors which your pupils never make.

The "Seniors" of the secondary schools of Illinois as a group rank low in English composition when their compositions are compared with the tentative standard which has been proposed. The fact that these "Seniors" write the kind of compositions expected of "Sophomores" raises a very serious question in regard to the course of study in English which is common throughout Illinois. Most of the high schools limit the study of English composition to the freshman and sophomore years. Only a few schools are placing any emphasis on composition work during the last two years of the high school course. If study and practice in written English are limited to the first two years of the high school course, may we not expect "Sophomore" compositions from "Seniors"?

A careful consideration of the results of this test which was given in more than three hundred high schools and academies of Illinois indicates that the kind of compositions which can be expected of "Seniors" scores about 7.2 on the Nassau County Supplement to the Hillegas Scale. The following composition, rated at 7.2, was written by a "Senior" in one of the high schools of Illinois. The quality of this composition is suggested as the minimum quality which should be required of the pupil who has spent four years in high school.

An Afternoon Off

Last fall during the hunting season for quail my chum and I took a memorable hunt down in the bottoms of the Little Wabash River. We had two good dogs and a sufficient supply of ammunition. We tramped quite a distance before we saw any signs of game. Our dogs made a point near an old rail fence corner. They were so uninterested that I thought they had discovered a rabbit, but when they were urged forward they drove out a bunch of eleven quails. We were so frightened, for we looked for a rabbit, that our shots were poor and only one of the birds was killed. My retriever carried it to me while both my chum and I watched where the covey alighted. We saw the quails alight in an old fence row so we followed it up. We were over our nervousness now and our shots were better. The birds would rise one two and three at once. We had good targets at which to shoot for that reason. It did not take us long to kill or scatter the birds so widely that it would be unreasonable to follow them. We succeeded in killing eight of the eleven quails. The place was ideal for hunting. A corn field with only part of the corn husked bordered a large weed field. Between the two fields was an old rail fence which had not been cleaned of weeds and brush for some time. Following this fence our dogs pointed another covey much smaller than the other. We had quite a time getting shots at the birds. First my friend and then myself would be in each others line of shot. My chum shot so close to my ear that it rang for several minutes but on the whole we enjoyed ourselves and were indeed thankful for an afternoon off.

(A complete report of this study, including the distribution of scores and the median score of 305 high schools, is included in the "Report of the High School Visitor, University of Illinois, for the Year 1919-20.")

This paper was informally discussed by Mr. O. A. English of Robinson.

Miss Hawkes of Decatur then presented a paper on a Minimum List of Books for First Year Literature. The paper follows.

Books for First Year High School Literature—and Minimum List
Clara N. Hawkes, Decatur

Some day a pedagogic wit will arise who can do justice to the theme, educational shibboleths of the twentieth century. Even now we sometimes glimpse the drollery of ourselves, biennially or oftener, fervently pouring our old wine into new bottles and exulting over the design of the flagons. Correlation, motivation, vitalizing, dramatizing, supervised study, socialized recitation, project, objective—far be it from one humble individual to speak too lightly of any of these educational varities. It is only the far-flung new names for things old and fundamental that "intrigue" us.

Enter Objectives—and never were things so needed in educational practice. To be sure, we once called them goals, then aims, but if a new appellation will induce us to think upon them, objectives they shall be.

Are we quite sure of our objectives, our aims, in the teaching of literature? In our first year of high school literature have we a goal toward which we move more or less steadily? Have we guide posts along the trail to keep us from turning too often into alluring by-ways or running aground in quagmires?

An inspection of such courses of study as were available in a short time revealed some definitely stated aims for the teaching of literature, one particularized objective for first year literature. I quote some of different types.

"To broaden the understanding and sympathy of the pupil by supplying through imagination a greater diversity of experience than may be had at first hand; to provide for wise and profitable use of leisure; to furnish opportunities for unconscious moral training through admiration for fine thoughts and noble characters and action; to make a determined resistance against the unbeautiful and the growing materialization of life.

"To give an acquaintance with and an appreciation of the best in literature.

"To give ability to select and enjoy the best of present day literature.

"To interest the pupil in reading good books and magazines by developing his ability to read not only accurately and understandingly, but also with quickened imagination and sympathetic appreciation."

"To encourage the pupil to read what is good and want more."

The first of these may seem too ideally beautiful, but surely the others are finely sensible, and it behooves us to hold high our banners in these days of substitutes for learning and culture. Our aims seem above reproach, our ammunition appears to be of the best, but our score is low.

Students after four years of high school do not, in overwhelming numbers, have "a taste for the best in literature." They do not "wisely and profitably improve their leisure." Too often they actively enjoy and promote the "unbeautiful." What is amiss? Of course, we may pause to call attention to the fact that in spite of the study of household science, not all homes are happy; that with all our study of the social sciences not everyone voted the straight Republican ticket. But what is amiss with the teaching of literature? Not so much as the pessimist would have us believe, but, on the other hand, the all's-right-with-the-world attitude is often symptomatic of spiritual laziness. Can we not discover whether it be our objectives, our methods, or our materials that are at fault—or none of these?

Again an inspection of courses of study should be of value. Even the limited survey made in connection with this paper showed several facts of interest. *The Iliad* or *The Odessey* (usually in a prose translation), was included in seven out of ten courses for first year literature. *The Merchant of Venice* or *Julius Cæsar* in six out of ten. Some book of short stories appeared seven times and one or more narrative poems the same number of times. *Ivanhoe* was found in four lists and *Treasure Island* in three. This indicates quite general agreement that the narrative form in prose and poetry has most appeal to freshmen.

Few of us will urge that the students' own likes and dislikes should be the determining factor in all our selections of books for their study, but still fewer will ignore these altogether. In a recent literary referendum, seventy-five students who look back on their freshmen days from the heights of juniordom and seniorism were asked to write unbiased and unexpurgated answers to three or four questions about those youthful days.

What had they liked best in their first year literature study? About fifty per cent answered either *The Lady of the Lake* or *Silas Marner*. (It developed that those favoring *Silas Marner* had never read *The Lady of the Lake*). *Ivanhoe* and Poe's *Prose Tales* were next on the list of favorites. *Julius Cæsar* and the collection of stories in Ashmun's *Prose Literature* were also deemed worthy of note several times. We will all agree that these likes are wholesome and show proper appreciation of our literary selections.

Among the dislikes expressed with more or less intensity and vocabulary were *The Iliad* and *The Ancient Mariner*. And the reasons given were not lacking in intelligence. But one voice was lifted in favor of *The Iliad*, which its detractors declared they couldn't understand and found hard and uninteresting. "I couldn't get interested in so many gods," one maiden naively explained. A few students had liked *The Ancient Mariner* greatly. Investigation showed that they had all read it with one exception—a teacher, herself much the poet. The others characterized it as unreal, too fantastic, superhuman. One boy thought it read "like the product of a diseased mind," and a girl had never been able to rid herself of "that slimy passage." Even these dislikes are not without reason.

While not bearing directly on our problem, the reasons offered for liking certain masterpieces were illuminating. The *teacher* seemed to be the chief factor in the enjoyment of anything, the story next. Perhaps it is minimum essentials for teachers that are needed!

But to return to the subject of books to read. What does the freshman need? He needs first something that will develop his ability to read *intelligently*, for do we not all agree that inability to read understandingly is at the root of many failures? Then this ability should be still further cultivated so that the reading may be, as one course of study phrases it, "with imagination and sympathetic understanding." To read with imagination in those days of the obviously commonplace, the blatantly commercial, the cheaply sensational; to read with sympathetic appreciation in these times of selfishness, misunderstandings, inability to see the other side; to read intelligently, imaginatively, sympathetically—would this not be an aim worth every effort in our teaching of first year literature?

Then, since the story, by general opinion and by the students' own choice, seems the best material for first year reading, what narratives shall we choose?

First: They should not be too difficult for intelligent reading.

Second: They should picture other times and scenes than present day Illinois, it is true, but they should also show the beauty and the heroism of the here and the now.

Third: They should appeal to the emotions, sympathies, ideals, of the boy and the girl.

Material that will make for intelligent, imaginative, sympathetic reading has been the standard by which the books included in the following minimum list have been selected. They are submitted with full appreciation of the fallibility of one person's judgment.

PROSE.

Novels:

Ivanhoe—Scott.
Silas Marner—Eliot.

Short Stories:

Prose Tales—Poe.
Readings from Literature—Halleck and Barbour.
Prose Literature for Secondary Schools—Ashmun.
Atlantic Prose and Poetry—Thomas and Paul.
Short Stories of the New America—Laselle.
Modern Short Stories—Law.

Many collections of short narratives, prose and verse have been compiled for high school use recently. Much of this material, however, is not suitable for first year use. The last three suggested are not so familiar as the first three, but are well worth investigating and testing.

The *Atlantic Prose and Poetry*, edited by Mr. Thomas, Supervisor of English in Cleveland, and by our friend, Dr. Paul of Illinois, is made up of gleanings from the Atlantic, and is specially happy both in content and literary value, and has that youth and modernity which our courses have lacked. *Short stories of New America*, compiled by Miss Laselle of Newton, Massachusetts, High School, is another fine first year book. The preface gives as its chief aim "to place clearly before young people the ideals of America through the medium of literature that will grip the attention and quicken the will to action." We need such a book just now. *Modern Short Stories*, compiled by Frederick Houk Law of one of New York high schools, is another varied and interesting collection of present day narrative.

There are doubtless other good selections of modern narrative. Let us include some one of them in our first year course.

POETRY.

Lady of the Lake—Scott.
Idyls of the King—Tennyson (Selections).
Old English Ballads (Ballad Book)—Bates.
Julius Caesar—Shakespeare.
Merchant of Venice—Shakespeare.
Lays of Ancient Rome—Macaulay.
Tales of a Wayside Inn—Longfellow.

To this should be added certain other selections if they have not been made familiar in the seventh or eighth grade—a sort of sub-freshmen list which includes:

Evangeline—Longfellow.
Sorab and Rustum—Arnold.
Treasure Island—Stevenson.
Tanglewood Tales—Longfellow.

Then there are four or five which seem on the debatable list. *As You Like It* has been omitted. The humor is too subtle for first year students in general to appreciate. *Franklin's Autobiography* if one may judge from students' reactions, had best be read with American history. *The Ancient Mariner* needs

further investigation even if it has always stood on our list. *The Iliad* and *The Odyssey*, if used—and we do not want to give them up—must be simplified and vitalized.

This is not a long list; first, because it is a minimum list which should be supplemented to fit local conditions; second, because the writer is about to promulgate a somewhat unpopular educational doctrine—let us read less. Not read less, to allow time for infinitesimal dissections of the text or impaling of facts in note books. Not read less, to give time to kill the joy out of reading, but time to create joy. It takes time to create the twelfth century atmosphere necessary to read *Ivanhoe* intelligently and imaginatively. It takes time to rebuild Rome in the days of Cæsar. In spite of the general verdict, previously referred to, against *The Iliad*, I once knew a class of freshmen that voted *The Iliad* the best thing they had ever read. Why? Because several days were taken to get ready to read it, and a number of modernizing features added to its study. But this took time. We need time to read aloud, especially poetry. At the present rate, reading aloud will soon be one of the lost arts. We need time to act drama, not merely to read it neatly seated in stolid rows. This fetish of “read more, read more,” is, in my opinion, as mentally debilitating as the prescription, “eat more, eat more,” would be physically detrimental for most of us.

We may have varied supplementary lists for those pupils who read more intelligently than the average. We may even, if educational exigencies demand, insist that all students, for their grade's salvation, bolt some mental food from this list, but let us read a few things with time to live them.

May I indicate by two sample menus for freshman consumption a suggestive maximum ration?

First Semester:

Tales of a Wayside Inn.
Readings from Literature—(Halleck
and Barbour).
The Lady of the Lake.

First Semester:

Short Stories of New America—La-
salle),
or
Atlantic Prose and Poetry.
Sorab and Rustum.
The Iliad.

Second Semester:

Ivanhoe.
English Ballads.
Merchant of Venice.

Second Semester:

Silas Marner.
Lays of Ancient Rome.
Julius Cæsar.

Finally, is it not possible for us collectively to work out some suggestive minimum essentials for first year literature after the manner of our minimum essentials in composition? For a long time we hesitated to set up these composition standards, as some still hesitate to apply them. We feared to clip some genius' opinions by censoring his punctuation, or perchance to disturb our own pet system of grading. Now we hesitate even more fearfully to approach the subject of essentials in literature. We feel it to be too intangible, a thing of the spirit only. Besides, some teacher's individuality may be thus circumscribed, or some piece of literature, subjected to a common sense scrutiny as to its special value, may be robbed of its beauty and charm. We need not fear. Most of us as teachers would be improved by a bit of circumscribing of our individuality. And literature—Shakespeare has survived even diagramming! And Browning has been parsed! We have often ignorantly distorted literature; intelligent consideration cannot harm it.

If we set up one or two simple objectives for our first year work, not mere golden clouds of ideals; if we considered carefully a list of books best to aid in reaching these objectives; if we even went so far as to indicate one or two

definite goals to reach in the study of different books, should we not be on the way toward establishing some usable minimum essentials in first year literature study; on the road away from so much hit and miss teaching; our faces turned, at least, toward better literary appreciation?

This paper was discussed by Mr. Richardson of Alton and by Dr. Paul of the University. The latter suggested that a committee be appointed to formulate a minimum list of books for the four years of the high school course. Miss Chamberlain of Oak Park advocated that this list be prepared with reference to the work of the grades to avoid useless duplication. Another suggestion offered was that a definite objective be first set up as, for example, literary appreciation, or the promotion of patriotism through literature, and that the list be compiled with one of those ends in view, thus avoiding the danger that the list will be merely an expression of the opinion of the committee.

The general subject of "Better Speech Year" was then taken up. The paper on Better Sentences was given by Mr. R. L. Sandwick of Highland Park. It is here reproduced.

Better Sentences

R. L. Sandwick, Highland Park

It is useless for me in the ten minutes at my command to expatiate upon the *value* of teaching young people to form better sentences. The great art of speaking and writing effectively is involved in the sentence. What I do think we need to emphasize is that making effective sentences is an art, and that, as such, it cannot be attained without a great deal of conscious effort and practice in applying the rules of the art.

Last Saturday night I was at a dinner to the president of Vassar College. At my table sat a woman whose conversation and anecdotes entertained us to the nth degree. I even noticed that people at other tables were observing us; we were having such a good time. Who was this woman? At the close of one personal experience beautifully told, I suddenly thought of the story told by Mark Twain's convict. And I, like the Charles Dudley Warner of that occasion, set myself to see the art in her next narrative. Art was there, variety, coherence, unity, contrast, comparison, lucidity, such that the hearer could give attention wholly to the anecdote without thought of words or sentences. No wonder we enjoyed ourselves. There is no art to equal it. We call the skillful speaker a spell-binder. It is a good word. Before the dinner ended I learned that this gray-haired lady who talked so well was a professional story-teller. She had spent her whole life attaining the art which her conversation reflected.

Such art is not attained with tongue or with pen in a day or a year. It is not attained in a high school—no, not in a college course. I confess that as a high school principal I have more than once been impatient with results in English composition. I have done English teachers injustice. I have seen bright pupils come through four years of composition and in the last month of the course when asked to write a graduation address of ten minutes I have seen these same bright pupils fall utterly short of writing a single paragraph which I was willing to inflict upon a commencement audience.

A few years ago I made up my mind that I was going to change all this. Yes, I was going to wake the English teachers up—make them earn their pay. I put a filing cabinet in every room. Now, then! Every theme must be filed in

the order of its writing and we should expect progress. At the end of the year, I summoned an eminent university rhetorician to come and see the themes and the improvement our pupils had made from month to month. He saw a good many themes. What he didn't see much of was the improvement. I must say, however, that those teachers who had spent most time correcting the themes had secured the most improvement. Some pupils, however, even under the best and most conscientious teaching, had failed to make noticeable progress in writing better sentences.

We tried the same method another year. We have the best and most conscientious of teachers. Teachers sat up past midnight correcting themes. Another authority was summoned from another college. He and I spent a whole day reading themes, themes by the best students, themes by the average students, and themes by the poorest in the classes. Disappointment still; no improvement proportionate to the enormous effort made by the teachers. Then we thought out another scheme. The English teachers themselves planned it. We imagined we had found at last the key to better sentences. The pupils should file their own themes, count from week to week the number of errors they made of a particular kind, keep record of them on their theme folders. They would endeavor to reduce the number of these recurring errors. The new scheme was launched with enthusiasm. So much improvement appeared the first month in punctuation, grammar and spelling that we were greatly encouraged. I wrote a paper on improving technique in English. I would tell the world how to teach English composition. Fortunately my article was not published. At the end of the year the teachers confessed that the new method had not been so successful as they expected. A look at the themes proved the truth of the contention.

At present we are patiently working—not expecting much in the way of better sentences and themes, from year to year, and getting not much more than we expect. Improvement in English composition appears to be a slow process.

I am convinced that teachers of English composition wrestle with the most difficult problem in secondary education. They must eradicate habits which have grown in so deep that they have passed into the region of subconscious mind. By the time of adolescence, speech has become a part of personality, and the high school student cannot acquire your new way of saying things without giving up some part of his own personality. Continuity of personality itself bids the pupil retain the old incorrect ways of speaking as being natural to him and acceptable to his associates; continuity of personality urges to reject the new as artificial and unacceptable to his associates. The teacher must launch habits in the face of conflicting habits, in the face of home environment, and psychological laws of suggestion and limitation. It is a hard proposition! When we think that on many a school and college faculty may be found some teacher who has not escaped from some such expression as "he done it," "I seen him," "You was," "They is" and "He don't"—then why should we wonder if it is hard for our students to correct these errors in a four year course?

As for good writing it is my opinion that it takes 10 years of unremitting practice to make an author, capable of producing acceptable literature. You know how Hawthorne wrote for over 10 years at Salem, filling the wastepaper basket with his efforts—"the obscurest man of letters in America." Tarkington went through the same period of struggle after leaving a modern university. Years ago I had as a pupil the nephew by Marriage of Robert L. Stevenson. The young man told me how his uncle sometimes spent hours on a single paragraph, writing and rewriting. This was when Stevenson was in California at the age of thirty. He had not yet won a place in letters, though from boyhood he had struggled to learn to write effectively.

Mr. F. Scott Fitzgerald, who achieved "This Side of Paradise" at 23, seems to belie the contention that good writing is impossible without ten or more years of hard study and constant practice. Yet we have it recently from

Mr. Fitzgerald's own pen in the Saturday Evening Post that from the age of 12 he spent most of his time in writing. "I wrote," says he, "all through every class in school—in the back of my geography book and first year Latin and on the margins of themes and declensions and mathematical problems." So even Mr. Fitzgerald spent his 10 years apprenticeship. If only every teacher of high school subjects would cooperate with the teacher of English, we could have more Fitzgeralds.

In spite of the difficulties it is possible to make noticeable progress in writing better sentences even during the short four years of a high school course.

In the few minutes remaining, I should like to suggest what I think can reasonably be done: (1) We can create a desire to write and to speak well. (2) We can secure better sentences by having the students do much reading of good literature especially aloud, and committing choice passages of prose. (3) We can eradicate the most common speech errors by means of drill in repeating aloud correct forms till the correct form comes more trippingly to the tongue than does the incorrect. (4) For the sake of artistry in the sentence—variety, brevity, clarity, etc.—we can give the students a knowledge of different forms within the sentence—the word, the phrase, the clause, whether as modifying or independent elements—the verb, active and passive, the infinitive, the participle, the gerund. We can teach variety of sentence forms. In short, we can teach the technique of the sentence. I don't know why in these days we should be so fearful of trying to impart a little technical grammar. Other arts require technique. Pictorial art among the ancients was imperfect because they had no knowledge of the technique of perspective. They had no beautiful colors because they lacked a knowledge of technique in color harmony. Early attempts to apply technique always result in stiffness and artificiality. The boy who tries to apply the rules of grammar and rhetoric begins by getting tangled up in the rules. But he can work through that awkward stage. It will take years to learn to apply the rules all unconsciously—to arrive at the art of concealing art. I am convinced, however, that without a study and conscious application of the technicalities of expression there can be no great expression. Of course such study may be inductive as where an author is studied and imitated. Only able minds can do this. The work may also be constructive as where themes are written or revised and made to embody principles of expression. In any event the untaught person has no command of eloquence. Only those learn the trade who serve apprenticeship.

Not long ago one of the wounded men at Fort Sheridan wrote as he lay in bed this little poem. Tell me, was the author educated or uneducated?

The Frog.*

"Ain't a frog a funny thing?
 "Him ain't got no tail most hardly!
 "When him hops, him flits;
 "When him stops, him sits
 "On his little tail,
 "What him ain't got most hardly."

*Words secured from Mr. Oliver Hinsdell. Author unknown.

It sounds like the spontaneous ebullition of an untutored mind. But it isn't. Have you read Twain's account of the convict's letter? It is a true story. Here was a letter appearing to be written by an uneducated ex-convict to a convict still in prison. It was in thieves' *argot* with bad spelling, punctuation and grammar, yet this story was so powerful in its appeal that few read it with dry eyes. Ministers of the Gospel read it in the churches and inundated their congregations. It happened that Charles Dudley Warner was present at a service when this story was read. He doubted whether it came from the

ignorant source to which it was attributed. The literary artist recognized the literary machinery. As he passed out of the church, Warner asked the minister whether he knew that the letter was genuine. Inquiry among prison officials soon discovered that the letter had been written by the prisoner to whom it was addressed. His object was to create sentiment in favor of his own pardon. *And the prisoner was a Harvard graduate.*

If the technicalities of music were unnecessary, we should have Carusos among the American aborigines. We have none. If the technicalities of pictorial art were unnecessary we might see masterpieces on the walls of cave dwellings. If there were no necessary technique in the art of expression, we should have spell-binders who never read a book, nor listened to an eloquent speaker nor saw an English grammar.

We cannot neglect the serious study and practice of composition if we would make better sentences. With habit forming drills, with reading aloud and memorizing good prose authors, with a knowledge of the technique of sentence structure and much practice in writing and revising, we may in four years' time start the high school graduate on his way; the college can bring him on a little farther, and five or ten years of personal effort after leaving college may enable a man to arrive at some proficiency in the art of writing and speaking. Art, like genius, "is one-tenth inspiration and nine-tenths perspiration." Art is long and writers are made as well as born; the making is a long process.

The paper was discussed by Miss Skeffington and Miss Nelson of Decatur. The latter thought the source of the trouble found by students in writing good sentences was really their scanty vocabulary. Miss Martin of Sullivan urged the teaching of plain, old-fashioned grammar as a partial solution of the difficulty. Miss Frazer of Oakland suggested some practical methods she herself had employed in teaching sentence structure. Other contributors to the discussion were Miss Gifford of New Trier and Miss Thornsburg of the Urbana High School.

Miss Isabel McKinney of Charleston then spoke on the subject, A Better Vocabulary. She deplored the fact that with a rich vocabulary of 300,000 words as compared with the 150,000 of the Italian language, and the 33,000 of the French, pupils utilize so miserably small a portion of their great linguistic inheritance. Insisting that to improve our stock of words is to improve, not only the dress, but the very body of our thought, she outlined on the basis of suggestions offered by her own pupils, various methods that might be used to enrich the vocabularies of pupils. Following the paper, the discussion became general. Miss Lynn of Galesburg said her class was acquiring three words each week, and practicing the substitution of better words for certain inexact locutions. Mr. Daniels of Charleston said he had found the reading of free verse helpful in the class room because of the vivid diction employed by poets of that cult.

The final paper was presented by Miss Eliza Thomas of Decatur. It is here published.

Practical Classroom Methods in Oral English

Eliza Thomas, Decatur

Plato says a good education consists in giving to the body and to the soul all the beauty and all the perfection of which they are capable. The great artist, Edwin Booth, had for his motto the following: "I will turn their mourning into joy, and will comfort them and make them rejoice from their sorrow," and "The idea of thy life shall sweetly creep

"Into my study of imagination,
And every lovely organ of thy life,
Shall come apparelled in more precious habit,
More moving—delicate and full of life,
Into the eye and prospect of my soul,
Than when thou liv'st indeed."

These quotations are inscribed on his monument and remind the visitor at Booth's grave of his ambition in life.

Our institutions of learning are realizing that oral English is a requirement of a good education, and that the field for the use of oral English is the daily life. The speaker meets his audience face to face. Minds must touch mind. This is accomplished when the speaker has the ability to speak the language with a clear understanding of the meaning, and when he is able to convey the thoughts to his audience. Human beings express thoughts through words, voice and body. The first requirement in oral English is a message that is worth while, given in a forceful and pleasing manner. All agree that the artist must have scientific knowledge as well as inspiration. The art of expressing thought through speech is just as great an art as any other. To be able to do what Edwin Booth, John Bright, the English parliamentarian, and Abraham Lincoln have done is certainly having the power to produce a work of art. These men were able to help people to broader sympathies; to quicker response of human needs, to make people think, and to have a keener joy of life.

The high school is not the place to turn out the dramatic artist or the orator, but it is the place to lay the foundation for the public speaker. Training in speaking is of the highest importance in nearly all vocations. The following is taken from a letter issued by the office of the Adjutant General, when so many of our men were in training to take part in the Great War. "A great number of men have failed at camp because of inability to articulate clearly. A man who cannot impart his idea to his command in clear, distinct language, and with sufficient volume of voice to be heard reasonably far is not qualified to give command upon which human life will depend. Many men disqualified by this handicap might have become officers under their country's flag, had they been properly trained in school and college. It is to be hoped, therefore, that more emphasis will be placed upon the basic principles of elocution in the training of our youth. Even without prescribed training in elocution a great improvement could be wrought by the instructors in our schools and colleges, regardless of the subjects, by insisting that all answers be given in a loud, clear, well rounded voice, which, of course, necessitates the opening of the mouth and the free movement of the lips. It is remarkable how many excellent men suffer from this handicap, and how almost impossible it is to correct this after the formative years of life."

The foregoing proves that drill in enunciating words should begin in the primary grades and should be kept up through the high school. The high school pupil should learn to express his own thoughts, and to interpret the thoughts of others clearly in a pleasing manner.

Oral reading, a branch of oral English, is one of the most complex subjects we study. In the reading of a single sentence various physical and mental states may be shown, while enunciation, pronunciation, accuracy, time, pitch, force and quality are combined together. The aim to interpret the thought the masters have written, and to give it to others requires vital thinking. (Correct pronunciation of words is not reading.) Animation is a result that comes from vital thinking. This does not mean loudness. A reader who thinks deeply, and understands, reports in body and voice the mental states that are revealed in the word and the thoughts that are between the lines. He recognizes the two kinds of punctuation, the visible for the printer, the invisible for the reader. He knows the phrase or clause may be grammatically subordinate, and yet of the greatest importance. The degree of importance determines how it should be read. He remembers the last word of the sentence is important and sustains the end of the line. Vital thinking quickens and develops the imagination. Vivid picturing is the result. Ingersoll puts it in these words: "A stage within the brain whereon he sets all scenes that lie between the morn of laughter and the night of tears, and where the players body forth the false and true, the joys and grief, the careless shallows, and the tragic depths of human life."

Good spoken English and oral reading require the same physical control the same vocal power, the same attention to expression, the same effort to hold the audience and similar mental activities. Cultivating one's power in oral reading, almost a lost art, will at the same time cultivate one's Oral English.

The first formal element in Oral English, is a good position, which may be acquired by standing tall with the entire body wide awake. One must have a feeling of buoyancy and aspiration upward. To overcome nervousness, send the nervous energy to the toes. Hold the crown of the head high, chin in, chest up and leading, hips thrown back, and weight on the ball of the leading foot. In this day special emphasis should be placed on the fact that the chest is to be up and leading. This may be proved by having some one show by indefinite pantomime that he desires to speak to some members of the class. Each member of the class responds by pointing to his chest and asking if he is meant. Not one will point to his head. In view of this fact, why should we have so many people with weak chests? The chest should be broad (do not make the back narrow), shoulders even, and the hands allowed to hang passively at the sides. When this becomes a natural and comfortable position, the speaker can breathe freely and easily and not get tired. If a pupil humps over in his seat, if he doesn't stand erect, or if he fairly doubles over when he is walking up steps, thus crowding his lungs into a small space, we need not be surprised at his tired feeling. Too much emphasis cannot be placed on good sitting and standing positions. In coming before an audience, students should make a slight pause, to secure attention of their hearers, before attempting to speak, and should remember not to dash away to their seats after the last work has been spoken. Students must have the right attitude toward their audiences. They must be willing to share, and to keep in mind the test, which is, "I want my audience to know, that I know that I know what I am talking about."

A good position is absolutely necessary for good breathing. To breathe correctly the costal and abdominal methods should be combined and all air should pass through the nose. Imagine that the voice box is located in the small part of the back, and that the tones are thrown from a spring board.

The first step in voice work is to acquire freedom of the lower jaw. The syllables Ma, Ba, Pa, may be given with full, round forceful tones, and then tossed lightly as if one were tossing a live tennis or puff ball.

The following may be used in the same way. "Humpty Dumpty sat on a wall." "Half a league, half a league, half a league onward." Follow this exercise by having students wag the jaws, then give these sentences: "I come o'er the mountain with laughter and song." My lords, I rise with astonishment.

The second step consists of exercises for the lips, whirring the lips, and then pronouncing e, de, do, e, o; ah, e. Attention should be called to the use of the tongue, and especially the tip. Imagine a bit of grass or a bit of thread on the tongue and try to get it off. Since many people forget the front part of the mouth in talking, it is necessary to get the sensation of front placement. Instead of working for louder tones, work for tone projection. Beautiful speech is due to the openness of the vowels, and the crispness of the consonants. The slogan of the day is neat articulation, and clean cut speech. Hum—m, n, and ng. The ng sound may be obtained from the word ring. Get a clear tone from a real or imaginary cut glass tumbler held on the palm of the hand and struck lightly by a pencil. Say "Good morning. How are you?", remembering the human voice expresses at all times the state of the mind, and the body of the speaker.

Time prevents giving more exercises for the voice, but these simple ones that have been given should be practiced daily. Time is required to overcome difficulties in speech and acquire freedom. When God makes a pumpkin he takes a season, but years for an oak tree. In art the simplest effects are those which have cost the greatest effort. By natural expression is meant natural in the big sense of the word, the ideal sense—not natural to the individual, for what is natural to one may not be so for another.

Since the field for Oral English is the daily life, the material may be gathered from this field. The speaker must bear in mind that he must first get the thought, then hold it, and then give it to his audience. Students enjoy debating with members of their own class, and other schools. Salesmanship speeches are a delight. One member of the class sells to another an automobile, an electric washer, or a home in a certain part of the city. Reports may be made on places of interest in the home city or visits to factories, art galleries and sight-seeing trips. Interesting discussions may be held on the need of our city. Interviews with people above the age of seventy and under school age. Speeches may be made in the interest of school activities, contests in oral reading may be held, and scenes from plays acted in pantomime. These have proved to be helpful in acquiring physical earnestness in both thought and emotion.

Aim to get a result; it may be a mental action that is, the changing of the mode of thinking. Have the pupil keep in mind Shakespeare's advice to the players.

Some one has said: "With the spirit of service, an appreciative understanding of the worth and beauty of truth, and ability through self power to rightly influence through expression, education reaches its fulfillment. Education is calling today for the mental and physical powers of expression. All that I have tried to share has been given me by teachers who believed in Nehemiah's precept. 'So they read in the book, in the law of God, distinctly, and gave the sense and caused them to understand the meaning.'"

The sessions suffered this year from the inadequacy of the room used for the meeting. More than fifty were standing most of the time. Another difficulty already referred to was the overcrowded program in the forenoon. It is to be hoped that both these unfortunate conditions will be corrected next year. With these two exceptions the thirteenth annual meeting was in all respects well arranged and entirely successful.

E. C. BALDWIN, *Secretary.*

8. GEOGRAPHY SECTION

In spite of the adverse conditions of last year the Geography Section came up with a good program and a record-breaking attendance, so large, indeed, that a different room than the one originally announced had to be used to accommodate the seventy-five or more who attended.

Professor Colby, of the University of Chicago, gave an address as the first number. On this no report is available.

Miss Marion Sykes, Bowen High School, Chicago, gave the next paper, which is here presented:

Problems of the Selection of Material for High School Classes in Geography

The subject assigned may be given as large a scope as one may choose, and I am choosing to interpret "materials" so as to include the selection of subject matter, of a suitable text book, and of illustrative matter.

I. In some places the selection of subject matter is determined definitely by the text adopted. Some teachers do not presume to change the order of topics, omit topics, or introduce topics. However, the choice of subject matter is important to most teachers and to all authors of texts. This selection is not an easy task in geography. Our aim is not to turn out walking encyclopedias of geographic facts, and we would meet with only failure if we tried to do so. We would like to equip young people with such knowledge of geographic facts and ability to solve geographic problems as would make them useful members of society. The study of geography should make them able to earn a better living, should add interest and meaning to their daily life, and should aid in making them good citizens who will do their part in local politics.

Much has been done and is being done in other subjects to find out definitely what parts of the subject matter are of greatest importance. In spelling, careful studies have been made to obtain lists of words used most frequently. Types of errors, causes of errors, what remedial instruction is possible, have been and are being carefully studied. Writing, reading, arithmetic are being given the same painstaking attention. Two authors undertook to write a high school algebra. They first went through books on subjects which required knowledge of algebra. They listed and tabulated the kind of algebraic work needed for these other subjects, and then they wrote a text planned to give just the kind of algebra for which these studies indicated there was a need. Of course, spelling, writing, reading, mathematics, are tool subjects as others are not. But some study of what is fundamental in geography might be of service in indicating to us what we should stress. This could be got at by inquiring of several hundred geography teachers what subjects or facts are indispensable, and choosing those on which a large number of people were agreed. Employers might be interviewed or a study of newspaper and magazine articles made, tabulating the geographic facts used and from these studies there could be obtained a definite material with which we ought to familiarize our pupils. This would include not my idea of what was most important, not your idea, but the ideas upon which a very large number of people were agreed.

A few years ago we were urged to do more incidental teaching and avoid the formal drill. Recently I heard a member of the faculty of a school of education tell his class that investigations indicated that it was a mistake to abandon formal drill and rely largely on incidental teaching. The fact is that

children like drill. It is a game which they find interesting. Of two classes, one taught without formal drill, and one with it, the pupils who have had the drill have the subject matter better in hand. So we need to formulate the fundamentals of high school geography and then adopt formal devices for teaching them. Any one who will set up acceptable tests in Geography will go a long way in fixing definitely the matter taught in many schools. This is fundamentally a task for a student who is working in both the department of education and the department of geography.

II. The problem of the text book is of importance in many schools for the book adopted determines what is taught and often how it is taught. The books available are too long. They are not written with the directness and definiteness which would make them understood by the high school pupils. Good exposition is not easy to write. It would surely be an interesting condition if one or two text books in other subjects could be used by the English class studying exposition as fine examples of such writing. The wording of our books, as well as the style, should be such that the high school pupils could understand what they were reading about. This is not always the case. For example, if I take up the subject of range of temperature, the pupils find out from the book where it is great, what conditions affect it, why it is important, but scarcely one knows from a study of the text what range really is or how he can find it. I hope Mr. Colby will write a high school text and that before it goes to press he will get a seventh grade teacher to translate it into easy English.

The figures and pictures in our books are excellent and can be made use of in recitation work. We need more maps in the books, but maps are expensive and the cost of text books must be made as low as possible. I deplore the lack of illustrative topographic maps in the S. B. T. Modern Geography. There is a fine collection of such maps in another book published by the same firm and since they had the plates I wonder why they did not put the maps into the modern geography.

It would be desirable to have a book which presented problems to the pupil for him to solve rather than the matter for him to read and reproduce; e. g., when the subject of temperature is studied from isothermal maps, a careful analysis of the distribution of heat is made. This the pupil is supposed to read, understand and in part at least be able to reproduce. Why not give him the maps, announce the problem, give him suggestions and questions, and let him work out the subject himself?

The same point of view applies to the study of cyclones and anti-cyclones from weather maps, the distribution of rainfall, the effect of evaporation. Such a handling of the subject might require the publishing of a "teacher's edition" of the text, but I believe it would make stronger, more self-reliant pupils.

III. Even with our selection of subject matter decided upon and a satisfactory text chosen, there remains the problem of the selection of illustrative material. It is difficult to see how the work progresses when the school does not possess maps. Physical maps of the world and of each continent and of the U. S. are invaluable. Convenience in hanging them adds much to their value. It is desirable to have them where they are always at hand. A black-board map of U. S. and one of the world, a population map of the world, a U. S. rainfall map are useful, and we might add just now a map of new Europe.

Besides these large maps, small outline maps for individual desk work are desirable. They help in naming and locating the states, also cities, rivers, lakes, mountains, deltas which are studied. Many who have dealt with our young people complain that they cannot locate what ought to be familiar places, and yet text books in H. S. geography do almost nothing to remedy this condition.

Besides maps, globes are helpful. Individual 6 inch or 8 inch globes, one for each pupil, a large political globe, and a blackboard globe are desirable. A seasonal apparatus of some sort shows the effect of the inclination of the earth's axis as words and diagrams cannot do.

The ball and ring-a-flash of colored water, and a bunsen burner to illustrate expansion due to heat are useful, also a wet and dry bulb thermometer when studying the subject of humidity. When studying the pressure of the air one likes to make a simple mercury barometer and an inexpensive barometer is a desirable piece of permanent equipment. An air pump with various dences to call attention to air pressure is helpful.

A collection of common kinds of minerals and rocks is desirable especially if it can be kept close at hand ready to be used as illustrative material at a moment's notice. When the subject of soil making comes up, pieces of quartz calcite, (mica can be used to illustrate variation in durability), also pieces of various kinds of rock are useful in the same way.

Pictures and lantern slides help fix in mind topics studied. If one has no lantern one can get pictures from magazines and from those the pupils bring in. Some schools have been able to fit stereoscopes and collections of photographs and some schools have moving picture machines. (I doubt if they are used much yet in the geography classes.)

In the study of the influences which modify the land surface there is nothing like the topographic maps. A sand model, or some other dence is desirable as an introduction to the study of these maps. Their use by the boy scouts and their use in the war have increased the interest in them. It is too bad that such a splendid help as professional paper No. 160, *The Interpretation of Topographical Maps* by S and A is not available for school use. The maps have been carefully selected and edited and the government has the plates. It is unfortunate that enough copies cannot be printed to supply schools which might wish them.

No matter what one uses or does not use, it is desirable to call attention to the matters of every day life which illustrate what we are studying. For some reason the school has often failed to connect its work with life as the child knows it. Pupils are often ready to bring illustrative material from what they have read elsewhere, but are loath to use the results of their own experiences and to speak of what they have seen. They seem to think that in the class room they must speak only of what they have read in books. There are few subjects that can be so closely related to life as geography can, but the pupil must be helped constantly to make the connection between what he is studying and what he sees about him. The subject matter is valuable so far as it can be made to function in life.

To sum up: Some standardization of subject matter should be made so that we know what facts teachers, business men, employers generally expect our graduates to know. We should drill on this material. We need text books which are not too long and which present the subject clearly and definitely in English which our pupils can understand. The problems which are presented should be treated as far as possible so that the pupil himself solves them.

Helps are needed, maps, pictures, globes, apparatus of various kinds, to aid in making the subject deal in things, not words. Life as the pupil knows it about him should be called upon to supply subject matter and illustrations.

Do not misunderstand me. I am not advocating a narrow, cut and dried course. But if there are certain definite things which those taking geography in the H. S. ought to know, those should be in every course of study and every text book, and should be the subject of repeated drill work. In addition to these a great mass of splendid geography material must be drawn upon to

explain and illustrate the other, to enrich and broaden the work. What this latter will be depends on the text selected, the interests of the teacher, the environment of the school, the reference books and other matter available, the topics of the day.

The paper by Miss Sykes was followed by an interesting and instructive address on Geographic Influences in the Human Life of the Arctic Region, by Mr. W. Elmer Ekblaw of the University. No notes on this address have been presented for publication.

The program closed with a paper by Flemin W. Cox, of Flora, which was as follows:

Objectives as a Basis for Curriculum Reconstruction

Mr. Flemin W. Cox, Principal, Flora

If education is to accomplish its purpose, it must know what its purpose is. If the purpose is known, it must be accomplished with the least amount of waste of money, time, effort, and human material. Before the war, it was evident that much of our educational efforts was directed, and much of our educational material was selected, by tradition. This period of reconstruction demands that education give a better account of itself. The curriculum must be re-examined, and every part must prove that it is worth while.

If education is to be scientific, it must have some standards, some instruments of measurements, otherwise we shall again be at the mercy of mere opinion, which is influenced by the tradition of hundreds of years.

Objectives are our instruments of measurement. First, let objectives be established and then everything in the new curriculum must answer the question, "In What Way Does This Material Accomplish the Purpose?"

Two years ago Dr. Charters read before this conference a most valuable paper on the readjustment of school curricula. He has pointed out the way. This remarkable discussion, so new and so condensed, failed to get across at one reading. Teachers were not ready to take it as a working basis. There were not enough who were prepared to do such work. A committee was appointed to start the work of curriculum reconstruction. It has been working and learning. Now, at this conference an effort is being made to enlist the whole body of high school teachers in the work of curriculum reconstruction along scientific lines. It is the dominant subject of the conference. In every section some high school principal is making an address upon the subject "Objectives as a Basis of Curriculum Reconstruction." Much of the material in these discussions must be taken from Dr. Charters' thesis. If we amplify some of his statements, we shall do well.

The first thing in curriculum reconstruction is the establishment of objectives. From Plato on, the aims of education have been discussed. One significant thing may be learned from these discussions, and that is that the aims have changed. Society is a vastly different thing, in Grecian times, in Roman times and in Maedieval Europe, and the objectives after which men were striving were different, and the education that prepared for one civilization would fail to prepare for another. We, then, must look for our objectives, not in the past, but in the life of man today in the United States of America. Quoting from Dr. Charters, "First study the life of man in its social setting and determine the ultimate objectives."

This is a large task. It may never be done to our satisfaction and there will be need of re-examination from time to time. But study and discussion will clarify these objectives and they will gradually become more and more

efficient as measuring instruments. Let those who will study the ultimate objectives. To others of a more practical nature, who do not care to dwell long upon these, the next step appeals, "Analyze ultimate objectives into secondary objectives and continue the analysis until objectives of a workable size be obtained." This process may be continued until between the material of the curriculum and the ultimate objective, a series of objectives may be determined which lead directly and surely from one to the other. Every objective ultimate or intermediate must be tested by its relation to the life of man, today, in the United States.

To illustrate what has been said and to make some relation to geography, let us take the ultimate objective of education that has been formulated by the committee on the reorganization of secondary education, appointed by National Educational Association.

"Education in a democracy, both within and without the school, should develop in each individual the knowledge, interest, ideals, habits and powers whereby each will find his place and use that place to shape both himself and society, toward ever nobler ends."

What relation does the material of geography bear to this objective? It is necessary to analyze this objective into secondary objectives, and the committee does this admirably, as follows, by going out into the world and finding out the activities of an individual. "Normally he is a member of a family, of a vocational group, of various civic groups, and by virtue of these relationships he is called upon to engage in activities that enrich the family life, render important vocational services to his fellows and to promote the common welfare." After further discussion the committee answer at these secondary objectives.

(1) Health, (2) Command of fundamental processes, (3) Worthy home membership, (4) Vocation, (5) Citizenship, (6) Worthy use of leisure, (7) Ethical character.

What relation does the material of geography have with these objectives? The relation is closer than it is with the ultimate objectives and by setting up other intermediate objectives it may be made closer still. Still between health and the study of the atmosphere, its temperature and humidity, a relationship may be discerned. The reading of maps should be considered a fundamental process. Almost every vocation from agriculture to transportation needs the material of geography. Geography is the basis of the social sciences, whose material is needed for worthy citizenship. Worthy use of leisure and ethical character demand a sympathetic understanding of other peoples and races, and their environment, while worthy home membership cannot be possible without the material of geography.

Is the geography section ready for the task? First determine from the life of man in its social setting the ultimate objectives. Second, set up intermediate objectives between the material of geography and this ultimate objective and measure the material by the objectives. How will geography fare? Who knows? It may persist in a modified form as geography. Its material may become incorporated in other subjects, history, civics, agriculture, commerce or new subjects as yet unnamed, but in this way, only such as is useful will remain and we members of this section must strive to be educators first, and geographers second.

Miss Alyda C. Hanson, of the University, was re-elected as Chairman of the Executive Committee, which now stands as follows:

Alyda C. Hanson, 1923, Chairman.

Flemin W. Cox, Flora, 1922.

W. E. Andrews, Flora, 1921.

9. HOME ECONOMICS SECTION

The morning meeting was called to order by Miss Bevier, who opened the session with a word of welcome. Miss Bevier urged that the Home Economics curriculum be stabilized and that physics and chemistry be required as part of the course.

Miss Bevier introduced Mr. William E. McVey, principal of the Thornton Township High School of Harvey, whose subject, "Objectives as a Basis for Curriculum Reconstruction," was full of interest and suggestion.

Objectives as a Basis for Curriculum Reconstruction

W. E. McVey, Harvey

During the last twenty years our social order has been undergoing a rapid process of evolution. Industry has become complex and highly specialized. Changes have taken place which have multiplied and profoundly affected the activities of the individual member of society. In three important spheres man's influence has greatly extended. His civic responsibilities are greater in community life, in state and national governments, and recently in international affairs. He must as a worker adjust himself to more complex situations. His opportunities for leisure demand particular training and motivated preparation.

The world outside the schools is pressing rapidly forward to new and greater things. Every day witnesses the passing away of some part of the old order and the installation of new things. As men and women engaged in public school work, we have undertaken the task of preparing the youth of our land to go forth and assume his rightful share of the duties and responsibilities of society. We must provide the manual and intellectual ability that is necessary to cope with this changing social order which is going forward with ever accelerating rapidity.

It is very apparent that our educational program, to be effective, must take into account these changes that are taking place outside the classroom. To prepare for participation in society we must know society, and the society for which we prepared twenty years ago is not the society of today. The educational program has not kept pace with social progress. We have inherited a system that was laid down for an earlier day. Changes have been made, it is true, but they are not fundamental.

If we may assume on the basis of the foregoing statements that our educational program, our secondary curriculum, is in need of readjustment, we may next inquire in what manner will this readjustment take place. Where shall we look for guidance in order that we may make certain that only such educational adjustments take place as are demanded by social conditions? The answer to this question appears simple. Social life requires of the individual the performance of specific activities. Our secondary curriculum should be organized in a manner that will prepare our boys and girls definitely for these specific activities. These activities may be discovered and identified if one will but go into the field in which they are being performed. An investigation of the work required to perform any particular task will reveal the mental power, the habits, the aptitudes necessary to the performance of that task. When this information is available, it can be translated in terms of objectives which will form a basis for curriculum making. These objectives will be definite and particularized.

If this method of investigation is carried on in connection with various social activities, we will then have a group of objectives which will point the way to the knowledge which men actually need. We will have a curriculum made up of a series of experiences which students will meet in order to attain those objectives. We will have a secondary school program which will provide those educational opportunities which will make certain the acquisition by the high school student of those practices, skills, ideals, and knowledge which will enable him to become an efficient member of a progressive society with the power of self-support, self-direction, and with a disposition to cooperate in all useful endeavor.

In any reorganization of our curriculum, two fundamental questions must be answered: (1) "What subjects are essential constituents of the high school curriculum?" (2) "What is the essential content in each subject?" It is not possible to discover from educational theory the answer to either of these questions. The answer can be met satisfactorily only in a study of the needs of life in society. In the past we have aimed at a vague culture, an unparticularized development often with no controlling purposes. Our curriculum reflects these undefined purposes. It is a result to a large extent of guess work and personal opinion. In order to reorganize our curriculum and place it upon a scientific basis, the task before us clearly points to the necessity of our going into the activities of society in an effort to discover the abilities, habits and forms of knowledge which men really need. When we have placed these abilities, habits, and forms of knowledge before us as goals of attainment, as objectives of education, we will have a body of material for a curriculum which will be consistent with our needs and adapted to the times in which we live.

Dr. Franklin Bobbitt has defined the curriculum in two ways: "(1) it is the entire range of experiences, both undirected and directed, concerned in unfolding the abilities of the individual; or (2) it is the series of consciously directed training experiences that the schools use for completing and perfecting the unfoldment." Dr. Bobbitt explains further "when the curriculum is defined as including both directed and undirected experiences, then its objectives are the total range of human abilities, habits, systems of knowledge, etc., that one should possess. These objectives will be discovered by analytic survey. The curriculum-discoverer will first be an analyst of human nature and of human affairs. His first task, in ascertaining the education appropriate for any special class, is to discover the total range of habits, skills, abilities, forms of thought, valuations, ambitions, etc., that its members need for the effective performance of their vocational labors; likewise, the total range needed for their civic activities; their health activities; their recreations; their language; their parental, religious, and general social activities."

A widely cooperative plan of reconstructing the high school curriculum has been undertaken in the State of Illinois under the leadership of Dr. H. A. Hollister, High School Visitor and Director of this Conference. Various committees have been appointed to work upon the problem of curriculum reconstruction in the different departments of the high school. A very pronounced feeling exists in favor of reconstructing our high school curriculum to fit it to modern needs. Investigation reveals there has been much curriculum tinkering, but no worthy and concerted effort at reconstruction.

The plans as formulated provide for enlisting the aid of all high school teachers of the State in carrying forward this work. The plan of procedure is outlined in the following excerpt taken from a letter received from Dr. Hollister:

"It is very desirable that, before we consider the time and place to be given to various subjects and activities in the school curriculum, we should determine clearly what our objectives are to be. By this means only shall we obtain any reliable basis for weighing the various

subjects as determined by the relative importance of each in attaining such objectives. We are asking you, therefore, to lead your teachers in a discussion of these objectives to the end that they may thoroughly understand their fundamental character with regard to our subsequent efforts at reconstruction."

The task that has been undertaken is a tremendous one. It is a task that is too big for any one man or any single group of men. It is a task that requires cooperative efforts of every teacher in the State of Illinois. The readjustment of any subject in the curriculum requires that every working unit be tested out in the light of certain well defined objectives. Our work will not be complete until each subject in the curriculum and each working unit in each subject have passed before the searchlight of this inquiry.

Two years ago Dr. Charters placed before a general session of this Conference seven general rules which govern the technique of scientific methods of curriculum construction. The seven general rules were as follows:

- "(1) First, study the life of man in its social setting and determine the ultimate (major) objectives.
- (2) Analyze these objectives and continue the analysis until secondary units of workable size are obtained.
- (3) Arrange these in order of importance.
- (4) Raise to positions of higher order in this list those objectives which are high in value for children but low in value for adults.
- (5) Determine the number of the most important objectives which can be handled in the time allotted to school education after deducting those which can be learned outside of school.
- (6) The best practices of the race in handling these objectives should be collected.
- (7) Arrange them in proper sequence according to the psychological nature of children."

There will come before this group of teachers the task of revising or at least testing out the present curriculum in home economics. Our curriculum in home economics is exceptional in that it is not distinctly an inheritance from simpler days. It has arisen to meet present needs and consequently is more modern and practical in tendency than traditional subjects. It will be well, however, to subject it to the same critical inquiry that has been planned for other subjects in the curriculum. We should determine the important objectives that should be set as our goal in the teaching of home economics. These objectives should be determined from the dominant life interests and activities and should be arranged in the order of their importance from the useful as well as the psychological viewpoint.

When these objectives have been determined upon, our next step, it seems to me, is to outline the student activities or student experiences necessary to reach these objectives. The final step in the working out of this plan will be to translate these experiences or activities into working units of subject matter. A curriculum built upon this basis will aim at those objectives, those student experiences, and those working units of subject matter which will function directly in the life of the student.

Activities in our home economics department should be performed as nearly as possible under normal conditions. In the case of sewing the practical activities will transfer quite readily to the schools. The constant need of garments and household articles give rise to normal responsibilities involving needlework. Work in garment-design, garment-fitting, embroidery, millinery, laces, curtains, hangings, etc., creates a character of work for which the schools can easily provide simple appliances. The work in cooking will not transfer with such ease

to the schools, but this condition is not surrounded with such difficulties as will warrant the creation of make-believe situations. Where a needed training will not transfer, a normal substitute should be devised. The preparation of luncheons for teachers are being used extensively to provide responsible training conditions. Students must work with foods, and this work should include canning, preserving, butter-making, starch-making, pickling, as well as the preparation of many common and tasty dishes.

It is not within the province of this paper to enter into a discussion of the elements that will compose the curriculum in home economics. The above digression has been made mainly with the idea of pointing the way to the sources where the objectives, the activities and the working units for our curriculum in home economics lie. Any effort at reconstruction must hold continually in view the practical and the dominant life activities. We must substitute a social for an academic point of view in the reconstruction of our high school curriculum. We must free ourselves from routine traditional thinking. The task that we have undertaken presents a tremendous field for constructive service. It is a task that requires the labors of us all. By the exercise of proper professional vision we will arrive with reasonable speed at a curriculum which will be better adapted to the new order in which we now live.

A discussion of the best means to use in giving Home Economics a definite place in the curriculum followed Mr. McVey's talk. Miss Byers of the Vocational Home Economics Board reported that in making a survey of Home Economics work in the state, she found in many cases it was not given a definite place in the curriculum and she urged that measures be taken to remedy this fault. She also recommended that the thought side be more fully developed in order to place Home Economics on a plane with academic subjects.

Miss Churton then read the announcements for the day, appointing, in conclusion, a nominating committee to appoint two members to the Home Economics Committee to succeed Miss Bevier and Miss Churton. Miss Hessler was appointed chairman with Miss Richmon and Miss Kirk on the Committee, their report to be given in the afternoon session.

The matter of a state organization for all women interested in Home Economics was brought before the Conference by Miss Bevier, who asked that this be given serious consideration by all present until the afternoon session, when a vote would be taken on it.

Miss Bevier then brought to the attention of the conference the fact that the fund toward the support of work in Constantinople College was \$400 short. She suggested that a collection be taken at the meeting to help meet this deficit. This was done at the conclusion of the morning meeting, nearly forty dollars being contributed.

The round table discussion of the morning, "Vocational Home Economics Courses," was ably led by Miss Esther Philley of Eldorado High School. She asked that all partake in the discussion, whether teachers of vocational home economics or otherwise. Miss Philley emphasized the fact that we must recognize our weaknesses in order to grow stronger. Vocational Home Economics was defined as training for the vocation of home making and in no way referring to wage

earning service. By analyzing the "home maker's job" the content of the course is determined, but this course must be altered by the individual teachers to meet conditions in different communities.

The question of lunch room management in connection with cooking classes was discussed and it was agreed that a definite stand should be taken for either running the lunch room or teaching Home Economics, as too often the routine work limits the educational value of the course in Home Economics. It was suggested that a carefully planned course might be arranged to meet the situation.

Another problem discussed was the over-balanced sewing classes as compared to cooking classes. Four points were brought out which might account for this: first, lack of cooking equipment; second, the high cost of clothing; third, the girl's love of adornment; and lastly, the method of teaching. A combined cooking and sewing course was suggested, which led to a discussion of the three and two day plan as against the semester plan of dividing time between cooking and sewing.

Home project work was taken up next. A project was defined as "a supervised, directed piece of work done under normal home conditions, calling into play skill and information acquired at school and requiring new skills and information in the utilization of which the student must exercise both judgment and initiative." Supervision of home projects and the giving of credit for this work seemed to be the big problem.

Miss Byers, representing Miss Davis of the Vocational Home Economics Board, brought before the Conference the problem of the Part Time or Continuation School. Two classes of girls will be eligible for Home Economics classes, those having little training but who are interested in Home Economics work and the experienced home makers. As the law when totally effective will include all girls between 14 and 18 years of age, the extent of the work will be very great. Some of the problems for which Home Economics teachers should be prepared are fluctuating enrollments and courses adjusted to the needs of the girl. Miss Byers suggested progressive short unit courses as the best solution to the problem of fluctuating enrollment and warned against the tendency toward individual teaching. She urged that the subject matter be economically worth while to the girls.

The morning session adjourned at 11:30.

One hour of the afternoon session was given over to the display of films suitable for high school use. The film "Foot Films," may be obtained through the Young Men's Christian Association, 17 North State Street, Chicago, Ill., and "Textile and Food Films" (Mrs. Woolman) from the Community Motion Picture Co., 46 West 24th Street, New York City.

Miss Dunlap of Millikin University was in charge of the afternoon session. She introduced Miss Fannie Brooks, who gave a most

interesting talk on "The Responsibility of Home Economics Instructors for the Health of High School Pupils." Health, she urged, should be first in any program, as it reflects in the work of the pupil. She made the following suggestions: that we make the pupil realize that what he eats is himself; the use of a class room weight record and food calendar; the use of devices to arouse interest in girls to care for health; that we try to influence the family through the children. Miss Brooks emphasized the importance of teaching neatness, appropriateness, cleanliness in dress, hygiene of clothing and textiles. Social hygiene, she suggested, would best be presented by women physicians, and Dr. Mary Norfeld's list of books on social hygiene was recommended. Miss Brooks concluded her very interesting talk by urging teachers to set an example before the children, to "look health, think health and talk health." She recommended a yearly physical examination, proper dressing of hair as well as appropriate clothing, particular care of the teeth and a correct posture.

The question box was conducted by Miss Triganza of Bloomington, who explained that the object of the question box was to give each one an opportunity to ask questions. Some of the questions discussed were:

"Isn't it time for the American Home Economics Association to say something about the content of the courses?"

"What proportion of time should be given to laboratory, recitation and home work?"

"What do you do with fast and slow workers in sewing classes?"

"How may the study of dietetics be made interesting to a pupil?"

At the conclusion of this discussion the Nominating Committee reported that it had met and recommended that Miss Bevier and Miss Churton be re-appointed to the Home Economics Committee.

Miss Bevier then asked that the Home Economics section give some expression to Miss Weigley as to its feeling about the need of a state organization of Home Economic workers mentioned in the morning meeting. After a free discussion Miss Churton made a motion which was duly seconded and carried that the section favor such an organization and that Miss Weigley be so notified.

The food and clothing sections then separated to take up a round table discussion of their various problems, Miss Van Horn of New Trier Township High School leading the food section and Miss Bertha Harper of Danville High School the clothing section.

In the clothing section the courses planned for vocational classes was the main topic of discussion.

Miss Van Horn brought the following questions before the food section:

"How can we unify grade and high school courses?"

"How may dietetics be made interesting to the high school girl?"

"How can we introduce large quantity cooking?"

"What amount of talking should there be in a cooking class?"

After an interesting discussion of these various questions the meeting adjourned.

Home Economics in Day Continuation Schools in Illinois

Elizabeth Beyer

In September, 1921, all schools face the problem of part-time classes. Some are facing it now. This new problem is placed before us by virtue of the operation of two State laws, one of which laws provides for compulsory part-time schools, and states, in effect, that any community, in which there are 20 minors between 14-16 not already in attendance on all-day schools, must establish a school in which these boys or girls shall be in attendance for eight hours per week for at least 36 weeks per year. This law goes into effect September 1, 1921. In 1922, the age limit is raised to 17 and in 1923 to 18.

The second law is in effect now and constitutes an "Optional-mandatory," by virtue of which it is provided that in any community establishing such a part-time school, all minors between the ages of 14-16 not already in attendance at all-day schools must attend the part-time school for at least eight hours per week during the time such schools are in session.

Under this last mentioned law 15 cities have voted to establish part-time continuation schools this year, and in 10 of these, namely, East Aurora, West Aurora, Chicago, Cicero, Galesburg, Granite City, Joliet, Peoria, Rockford and Springfield, such schools are now in operation.

The problem, numerically alone, is a large one. Evidence as supplied by a limited number of schools who have already made a census-study indicates that the number of pupils between the ages 14-18 who will be eligible for part-time instruction will closely approximate the present high school enrollment. To illustrate, Springfield reports 1,787 pupils between the ages of 14-18 not in attendance at all-day schools. This is a somewhat larger number than her present high school enrollment and moreover represents 3.02% of the total population. Applying this ratio to the present State population, we have an estimate for 1923, when the law is totally effective, of an addition of 200,000 pupils to the school enrollment for 8 hours per week. It must be remembered that while for 1921 the age limit is 16, schools should not plan on that basis, for these same pupils by the full operation of the law will be held in school until they are 18.

The title "part-time" indicates that the time during which such courses shall be maintained shall be part of the regular working day, that is, from 8 to 5.

Home Economics as training for home-making, functions, as a part of part-time schools (a) to increase general or vocational intelligence, or (b) to increase knowledge in home economics. The pupils may include not only girls who have little knowledge or experience as housekeepers, but who have and are having certain household duties and are young women in shops, factories, stores, or just at home as assistants, or helpers to mothers, but also, women or girls with experience in housekeeping and who are engaged for the most part in the business of housekeeping.

The difficulties of organization in part-time work develop primarily as due to two factors, (1) wide variation in training and experience of pupils who enroll, and (2) fluctuation in enrollment resulting from transient nature of much of employment. For these reasons much of the work, unfortunately, has been organized along lines of individual instruction and has resolved itself into mere

"showing and telling." This is no more acceptable in the part-time school than it is in the day-school. Class or group instruction should dominate, the pupils being grouped according to ability and experience and according to type problem handled.

Group instruction is conducted most efficiently where not less than two teachers are employed in the work. Each teacher may handle two groups. One of the teachers may then handle a group of "beginners" and a "beginning group," this last group being such from the standpoint of registration. The beginning group is a "try-out" group from which the pupils will be classed according to ability and experience and from which they should be placed with their proper group when that group is ready to begin a new unit. Instruction must be given in the main, as individual instruction. In Massachusetts and in Milwaukee, where part-time schools have been organized for some time, such a "beginning group" is called a "Reservoir Class." In Springfield, a similar "Reservoir Class" has been organized, calling it an "Acquaintanceship Class," extending for twelve lessons, 6 weeks, during which time the girls are given lessons in general house-keeping.

In organizing a course of study, short "Unit" courses furnish the basis of progression. Such an organization has been found advisable for two reasons, (1) necessity of maintaining interest, and (2) necessity of providing for the fluctuation in enrollment.

The girl who attends part-time school differs from the girl who attends all-day school and whose major interest revolves around a school. To the part-time pupil school is only a short and forced insert in her daily life. She is unaccustomed to the mental adjustments it entails. Long drawn-out courses do not appeal to her. The "unit" course is more adaptable. By the "unit" course organization fluctuation in enrollment may be taken care of without so disrupting classes that group instruction is impossible.

Within the organization these units should be progressive—that is, the work of one unit should not repeat the work of another previous unit and the course, in its entirety, should be unified series of progressive steps. In fact, it should in part be the aim of the continuation school, to extend the child's education from where it "left off," and hence part-time courses should evaluate themselves as against courses maintained in all-day schools. They may function, in part, in preparing the pupils to again enroll in all-day schools.

A course of study in home economics should be intensive and should include units on:

- (1) Selection, preparation and serving of foods.
- (2) Selection of materials for clothing, construction of garments and renovation of garments.
- (3) Health of family, including care and feeding of children; home nursing, invalid cookery.
- (4) The house and its decoration.
- (5) Home management.
- (6) The home and the community.

Unit courses which will be arranged within these several phases may be based upon various central topics, i. e.: In foods, a series of 6-8 lessons centering around breakfasts; a series of 6-8 lessons centering around luncheons, etc.; a series of 6-8 lessons on food preservation; a series of 6-8 lessons on baking mixtures, etc.

The part-time school removes the child from industry. It must then be economically worth while. We may not take a girl out of employment and give her anything but the best. Problems of organization, of psychology, and of

adjustment to the variety of needs of such a varied enrollment demand that only the best teachers be allowed to conduct this work. A sense of responsibility that only the best will suffice for these girls for the short time of each week they may spend in the school should govern not only the selection of teachers, but also the selection of rooms and equipment and the maintenance of courses.

10. MANUAL ARTS SECTION

MORNING SESSION

The session opened at 9:30 A. M. in Room 206, Education Building, F. F. Stables of Mt. Vernon presiding in the absence of Mr. Touve.

It was explained that the Committee on "Course of Study in Manual Arts" had no report because it had been impossible to get together, as some members had left the state.

Principal Arnold Lau, Rock Island, gave a short discussion of Curriculum Reconstruction.

Following Mr. Lau, Professor S. J. Vaughn, University of Illinois, spoke in a most illuminating and interesting way of the "Continuation Work and Its Relation to Manual Arts." He emphasized the tremendous opportunity and responsibility of Manual Arts teachers in continuation work. Professor Vaughn added some remarks regarding salaries, saying he was paid what he earned and believed the same true of most teachers in similar lines, and that high school boys especially, should be encouraged and trained to take up the teaching of Manual Arts. These remarks brought interesting and favorable comments.

In the absence of Mrs. Nellie Wall the subject, "Positive Methods by which the Art Courses and Manual Training Courses can be brought Into Closer Relationship," was treated by Captain L. A. Tuggle, alone. Captain Tuggle spoke particularly of the need of art teachers to be informed of methods and possibilities in the manual training shop, and of the need of manual training teachers to know more of the principles of ornament and decoration which will add to the shop work. He suggested also numerous means of cooperation of these two departments, recommending the reorganization of the Illinois Association of Manual Arts.

A short business session followed in which Miss Pauline Osborne, Urbana, was elected secretary to succeed H. C. Mohler. Professor S. J. Vaughn, University of Illinois, was elected to the Manual Arts Section Committee to serve three years. Mr. Linder S. Wood, Bloomington, was elected to fill the vacancy made by the departure of Miss Skinner, thus serving till 1922.

It was decided to consider the reorganization of the Illinois Association of Manual Arts at the afternoon sessions.

The session was adjourned and a meeting of the Committee followed, at which Mrs. Nellie Wall, Danville, was elected chairman for the ensuing year.

The Committee as it now stands is: Mrs. Nellie Wall, Danville, 1921; Edna Gifford, Charleston, 1921; L. A. Tuggle, Danville, 1922; F. F. Stables, Mt. Vernon, 1922; C. H. Dalton, Lovington, 1921; Linder S. Wood, Bloomington, 1922; S. J. Vaughn, University of Illinois, 1923; Pauline Osborne, Urbana, Secretary, 1923.

The papers presented are here included:

Positive Methods by Which the Art Courses and Manual Training Courses Can Be Brought Into Closer Relationship

L. A. Tuggle, Danville

The practice of art implies the release of much accumulated energy; general poverty is unfavorable to it. Owing to the general wealth of our soil, our artistic production should be exceptionally continuous and abundant. The diversity of our American climate and nationalities should allow us to practice every form of Western art. We have been able to learn from all our European neighbors, and in the future, because of the close contact of our American young men in the World's War, should be able to influence them all.

There was a time when in painting color prevailed over design, but with the multiplicity of complicated machinery and the political circumstances of the world, discipline has prevailed over freedom, and design has asserted itself. Throughout the World War a standard and duplication of parts for all the weapons of war prevailed, hence the design for utility and rapidity of construction was the predominating feature. Standardized ships were built; only one kind of motor was manufactured for airplanes; shells constructed that could be fired alike in the Enfield and Springfield rifles or in the Browning, Vickers or Lewis Machine guns or automatic rifles. So through the discipline of war design for utility and rapidity of construction have become the predominating feature of art.

Because chairs and tables are much more in request than pictures, art must necessarily exert itself through decoration. Designs for projects in the manual training shop in right angles, straight lines and simple ovals can be achieved unsurpassed in grace and apparent simplicity by the study of the needs of the manual training shop by the art teacher.

The chief thing for the art teacher to remember in designing articles for the manual training shop is utility and construction, the ornament being the last consideration. The importance of the subject of design is a serious study. Whether one is to work in furniture making, iron work, house furnishing or on any object to be constructed, if his product is to be salable, it must be of pleasing proportions and attractive appearance, as well as of stable construction, and there are certain fundamental principles of design which may be applied to any constructed project in such a manner that they will tend, not only to emphasize the construction, but to make that project more attractive in appearance. This means that the spirit of art is brought into the work, through which the manual training boy gives expression to his satisfaction in accomplishment, for it is the function of art to refine the beauty which lies in lines and spacings of an object, and to give full expression to its structural elements.

The art courses can be made to apply the fundamental principles of rhythm, balance and harmony in the art of applied design by giving the boys the ability to express their ideas in art forms and to acquaint them with the possibilities and limitations peculiar to the various materials which are used in manual training shops, as well as to give them an intelligent point of view, that they may modify decorations to meet the requirements of materials in various forms.

Much shop sketching should be done in the art courses. Through pencil drawing the pupil develops the power of visualization in forming a clear mental picture of an object in his mind. Before he attempts to construct the finished product he must be able to see the size, shape and proportion of each separate part, as well as the finished product ready for use. Free hand sketches should be made in the form of drawings which show the views as they are seen for a clear explanation to the manual training boy in his work. Free hand sketching goes hand in hand with mechanical drawing and one is essential to the other before either can be brought to its highest efficiency.

In loom weaving the patterns can be made by pupils supervised by the art teacher. Of course the art teacher must understand how to operate a loom and know just a little of its possibilities so that the designs made are usable. Today France and its large cities ask eminent painters to paint cartoons for the tapestry that they order from the famous "Gobelins." Last summer I had the pleasure of visiting the "Gobelins" factory in Paris. It is owned by the State and is an enormous workshop and school of art established by Louis XIV and Colbert in 1662, where Le Brun was absolute master for 27 years, and over 800 artists and artisans, who were employed not only on tapestry, but wood carving, bronzes, mosaics, embroidery, etc. In that factory it takes a skilled weaver one year to weave one square metre of tapestry.

All fine workmen in any vocation have more or less ability to draw. The ability to draw gives them not only the power to transfer their conceptions to paper, but it also helps them in the execution of the work. The iron-worker having a knowledge of free-hand drawing is enabled to form his material into proper shape. Forge work is generally fashioned into shape by the eye. With art training a boy can see the defects in his shop work much quicker than without such training.

The art courses should make designs for the forge shop. Patterns of leaves for grille work, scroll designs for iron doors and window grilles, beautiful little designs for door-latches, hinges and candlesticks can be easily worked out by the art teacher. In France I saw some wonderfully artistic key escutcheons and door knockers in the old castles, and especially in the modern chateaus. Some of the hand carved buffets had drawer pulls in keeping with the carvings. Simple designs for lanterns, hat and coat hooks, lamps and lamp shades can be designed for the forge shop.

With all our enthusiasm for positive methods by which art and manual courses can be brought into closer relationship, it appears a difficult task because the art and design teacher, usually a woman, does not know the methods of construction, restrictions and requirements of materials, tools and tool processes, and the shop teacher, usually a man, does not know the rules and principles governing the application of ornament. So there you are!

The revision of the art course by Mrs. Nelle Wall, Danville, and committee, in 1918, in my judgment, needs no enrichment at this time, and I invite your attention and careful study of their proposed "Industrial Art Courses."

AFTERNOON SESSION

This was divided into two groups,—Manual Training Teachers and Art Teachers.

A. Manual Training Group

For this group the minutes show the presentation of one paper by C. H. Dalton, of Lovington. This paper was as follows:

Libraries for the Manual Art Teacher and Class

By C. H. Dalton, Lovington

The topic which has been assigned me to present to you is "Libraries for the Manual Arts Teacher and His Class." To many this will have no appeal. It will not interest some because I am well aware of the fact that you have good personal libraries, and, added to this, your schools have good libraries for reference work. Those of you who are so situated should be congratulated and all that I could say to such would be you should continue to add a few of the latest books on the various subjects to your department and when visiting a fellow teacher try to get him interested in the obtaining of a better library.

To another class this may have no interest, I hope, however, and truly believe that this group is small. When a person tries to put his hands on your pocketbook he is getting on dangerous grounds and as books cost money the pocketbook must suffer. We have a few teachers who buy no books after they leave college. They neither invest a portion of their own money nor do they make any fight to have the school board buy any. To this latter class of teachers and to those who try to "get by" with only two or three blocks, I direct the following remarks. A few facts stated in a plain way and I close. If only a few of you by using your own funds or by interesting your boards of education secure just a few more books, I shall feel highly repaid for my poor effort.

Do you know that some teachers in our high schools are using exactly the same projects, presenting them in the same sequence, and as nearly as possible in the same manner as they as college students worked out? This is a deplorable condition. The teachers in this class (and the class is large), are either taking the line of least resistance or do not know how to teach the student of high school age. Take mechanical drawing for instance. We have seen the plates made by, say a freshman, during the year. We have the year's work before us; we see exactly the same figures that the teacher had worked out in his first course at the university. The work may be correct and the technique rather good. Now talk to the boy who made the drawings, turn to a certain drawing and ask him to explain it to you. What will he do? Frequently we find that he can explain but a small portion of it. In reality it is but so many lines to him. His mind has not been developed by the exercise. The only thing that has been learned is to use the drawing instruments and in many cases this must be unlearned when he comes to the university professor, because he does not have the correct system. In fact, he generally has no system because the teacher who has not the forethought to make a more comprehensive list of examples has not the forethought to instruct his students in the proper method of "inking in" the plate. The condition I have stated. The remedy, as I see it, lies in the library, the teacher to be the physician. In the first place, you as a college student had finished your mathematics in the high school, especially geometry. You also selected a course at the college in which you felt that you could excel and perhaps all you needed in mechanical drawing was one project or plate dealing with one or more fundamentals or principles. Not so with the high school boy; he must have more than one drawing bearing on certain principles if it is to be

of real worth to him. His mind on three dimension material does not work as rapidly as ours. When he have made the orthographic views of a cube we at once apply the same principle to a rectangular figure and so on, but many of our boys cannot; they must have more time to work it out. To make a long story short the boy does not get enough work on a fundamental. A few more projects bearing upon the principle should be worked out before he advances. After a step has been taken, clinch it by referring him to library or other texts. The larger the library, provided it is used, the larger the view the student will obtain.

Some of us are teaching mechanical drawing from a single text, the view from the students' standpoint must be narrow, although we now have some good texts for high school use. I would suggest the use of several texts; some of them could be used more as reference books; then have in the library some practical reference books for their use. On top of this I would suggest the use, as far as possible, of objects found in the drawing room and shop. I do not mean to say that we are to stay on one point forever. I do mean to say, stay on it until understood by the majority at least. A good text may do this; backed up with reference work it is sure to.

Practically this same condition exists in many of our shops. Look at the projects which the boys have made in the shop. What do we have before us? Perhaps a hundred pieces of furniture, the work of twenty boys. But look more closely; here are twenty tie racks all alike; twenty taborets all alike; twenty stools all alike, and so on. What does this show? A decided weakness upon the part of the instructor. One sheep will follow another unless checked. Only by varying the plans, grouping several projects of like principles together, by the teacher, either from his own storehouse of knowledge or through the medium of the reference library, will the student receive the best training. Although a good manual training teacher is able to work out many designs, his work will be made lighter and I believe the students' work will be more thorough if they have access to a library which contains books in which they find suggestions from which the desired design may be worked up.

We also have with us the shop teacher who uses but one book and all the projects made in the shop originate from that book. He may start his boys making articles from the designs found near the front and as the year advances the students wade through those plans, making many good pieces, but no attempt is made to change in any way the original design and it would be out of the question for a boy to make something, if the design was not in the book. Do you think that I am making this appear worse than it really is? Am I trying to stretch a few points to make my argument appear stronger? With all due respect to the writers of these books, they are rendering us wonderful assistance and we can't get along without them. They are the leaders and we are to follow. They have put forth their best efforts for you and for me; they are interested in us and in our students; they are the masters of our line. For instance, a man with whom we are all personally acquainted, Prof. Ira Griffith, has many valuable books on the market. For years I have been one of his disciples, although never a member of any of his classes. I have several of his books and I think them second to none; but listen, I have a number of times seen cuts in the Industrial Arts Magazine, and in the Manual Training Magazine of work purported to have been done in certain schools and upon inspection have found that every project, every design without any change, was taken from Prof. Griffiths' "Correlated Courses." Is this not proof enough that some are misusing the book; are not getting the constructive work from their students they should; are not developing initiative on the part of the student? We hope to be turning out boys from our high schools who will be able to do more of the head work in future life, the makers of real designs for our comfort and advancement, if you please. The work with their hands, as I see it, is secondary. The larger and broader view is first. Although all these patterns in book mentioned are correct and good, the boy will be better educated if he has a chance

to get ideas and work up more of his design himself. Here again we have sufficient evidence that our department is short of proper equipment. The books are on the market, but not on the shelves of our libraries.

Another department of the same shops are often found short of proper literature. Many of us as students did not learn in detail how to finish properly many kinds of wood. Nor did we learn much about how to obtain various shades on a given kind of wood. So, when the boy completes the woodwork and is ready for the finish, all soft woods are finished in like manner and the hard woods take another finish. No attempt is even made to suggest to the student that other shades and colors could be worked up and perhaps suit the future surroundings better than the one commonly used in the shop. I realize fully that it is a rather difficult problem to have in the shop several finishes, but it can be solved. Also we have the element of fear in the mind of the instructor. The boy has a well designed article ready for the stain, but the teacher is not sure that he can direct the work to obtain a certain finish, consequently he has the boy to finish by the same old method. Personally, I believe that the results we Manual Training teachers obtain in our finishing rooms are our poorest. Of course there are many factors which enter into the cause, but one of them is lack of knowledge upon our part. There are several good reference books on the subject of finishes and we should have them in our schools, if not in the school library, then in the personal library.

Returning to the topic of design, some of us let slip a good method of obtaining, for practically nothing and with but little effort, books which would stimulate the mind of the prospective builder to its greatest capacity. I refer to furniture catalogs. Long before the boy could properly design an article he can take a catalog and work out a design and in many cases will make changes to suit his fancy, and the result is most gratifying. Every shop library should contain many furniture catalogs and new ones added annually. I do not mean that we teachers should try to obtain them from the factories or wholesale houses, which have spent large sums in preparing them for the trade, but every year the retailer disposes of many. These have accomplished their work for the dealer and should be saved from the scrap-basket by the progressive teacher.

Speaking of catalogs calls to mind another suggestion I would like to make in passing. None of our shops are equipped with all kinds of machinery which might be found in a factory doing like work. By having at hand machinery catalogs we may at times during the year explain and discuss the pictures with the boys, thus enlarging somewhat their acquaintance with the machines which otherwise might be impossible.

How many, many times we are called upon during the year to answer this question for some youngster: "I believe I will take up a certain calling after I finish school; what do you think my success will be?" Many times we are busy and cannot go into detail; we give it a little thought and make some sort of answer. Would it not be better to add to our answer: "Come to the library and I will point out to you books, written by authorities, which will help you solve the problem." I here refer to the section of the library which should contain many books on vocational guidance. These will help in a measure to provide against misfits in life and a little expenditure of time and money may be seed sown on fertile soil, the harvest of which could not be estimated.

Then there are the many valuable magazines, not only the school papers, but those for the trades. Some of us do not even take one of the magazines which are devoted to our line of work. We should be regular subscribers to at least the best in our line and should have the school subscribe for others. New magazines coming into the school regularly keep things humming and boys progressing.

One more suggestion and I close; this is not left to the last because it is of little importance. I consider it of great importance. Many of us do not con-

tinue year by year to develop our own minds by reading good literature. When we quit reading we quit developing. It is essential that we have access to books which will help us in our specific work, in our professional development, and in our cultural growth. Many books which have long since been written would help us do our work more successfully; then there are new books with new educational ideas, methods and standards and unless we get hold of a few of them and devour their contents we starve. May none of us starve, but continue to grow. Look after the professional library.

I have prepared a list of books which is only suggestive. There are many obtainable and many perhaps better than these I have listed. I hesitate to mention certain books for I know that each of us have our own ideas of a book and my own personal experience tells me that I am not qualified to present to you a list which would contain all of the best in the various lines. The list does contain books which would be of value to the Manual Arts teacher and his class.

A SUGGESTIVE LIST OF BOOKS BY C. H. DALTON,
Township High School, Lovington, Illinois.

(1) *Texts and Reference Books for Aid in Specific Work (Woodwork and Drawing).*

Cyclopedia of Drawing; American Technical Society.
 Mechanical Drawing for High School; French and Svensen.
 Mechanical Drawing for Secondary Schools; Crawshaw and Phillips.
 Problems In Mechanical Drawing; C. A. Bennett.
 Freehand Perspective Sketching; Dora M. Norton.
 Mechanical Drafting; H. W. Miller.
 Details of Building Construction; W. A. Radford.
 Engineering Drawing; T. E. French.
 Principles of Design; E. A. Batchelder.
 Alphabets, Old and New; L. T. Day.
 Mechanical Drawing for Trade Schools; C. C. Leeds.
 Shop Sketching; Ralph Windoes.
 Shop Projects; M. G. Burton.
 Blue Print Reading; E. M. Wyatt.
 Correlated Courses; Griffith.
 Carpentry; Griffith.
 Essentials of Woodwork; Griffith.
 Woodwork for Secondary Schools; Griffith.
 Furniture Making; Griffith.
 Teaching Manual and Industrial Arts; Griffith.
 The Manual Arts; C. A. Bennett.
 Manual Arts for Vocational Ends; Crawshaw.
 Problems in Wood-turning; Crawshaw.
 A Course in Wood-turning; Milton and Wohlers.
 Pattern making; H. T. Purefield.
 Pattern Making Note Book; G. G. Greene.
 Furniture Upholstery; Emil A. Johnson.
 Seat Weaving; L. D. Perry.
 Bird House Architecture; L. H. Baxter.
 Bird Houses Boys Can Build; A. F. Seipert.
 Practical Book of Period Furniture; Eberlein and McClure.
 Furniture Making; Bowers and Bovingdon.
 How to Know Period Styles in Furniture; Kimerly.
 Agricultural Wood-Working; Louis M. Roehl.
 Farm Wood-Work; Louis M. Roehl.
 Problems In Wood-work; Edward F. Worst.

Problems of The Finishing Room; W. K. Schmidt.
 Up To Date Hardwood Finisher; F. T. Hodgson.
 Industrial Arts Magazine; Bruce Pub. Co.
 Manual Training Magazine; Manual Arts Press.
 The Artisan; Grand Rapids.

(2) *Helps on Vocational Guidance.*

Readings In Vocational Guidance; Bloomfield.
 Vocational and Moral Guidance; J. B. Davis.
 Starting In Life; N. C. Fowler.
 How To Get a Position and How to Keep It; S. R. Hall.
 Choosing a Vocation; Frank Parsons.
 What Can a Young Man Do? F. W. Rollings.
 Worker and the State; A. D. Dean.
 Occupations; Gowin and Wheatley.
 Learning to Farm; Lapp and Mote.
 Vocational Guidance; Puffer.

(3) *Pamphlets Containing Lists of Good Books May Be Obtained By the Asking From Various Companies, Viz.*

Guide to Good Reading; American Book Co.
 World's Best Books; Globe-Wernicke Co.
 The Blue Book of Fiction; Globe-Wernicke Co.
 Literature and Music; Columbia Graphophone Co.

(4) *For Professional Development and Cultural Growth.*

Democracy's High School; Wm. D. Lewis.
 Cyclopedia of Education; Paul Monroe.
 Wider Use of the School Plant; C. A. Perry.
 Social Principles of Education; Geo. H. Betts.
 Schools of Tomorrow; John and Evelyn Dewey.
 The Coming Generation; Wm. B. Forbush.
 Changing America; E. A. Ross.
 The Social Center; E. J. Ward.
 The Peoples School; Ruth M. Weeks.
 The Gary Schools; R. S. Bourne.
 Public School Administration; E. P. Cubberley.
 A Modern School; Abraham Flexner.
 Educational Tests and Measurements; Monroe, DeVass and Kelly.
 Measuring The Results of Teaching; W. S. Monroe.
 Economy In Secondary Education; Will Russel.
 The Measurement of Intelligence; L. M. Terman.
 True and False Democracy; N. M. Butler.
 America Education; A. S. Draper.
 Educational Reform; C. W. Elliott.
 Education for Efficiency; C. W. Elliott.
 New Demands In Education; J. P. Monroe.
 Froebel and Education Through Self Activity; H. C. Bowen.
 Herbart and the Herbartians; Chas. De Garmo.
 Up From Slavery; Booker T. Washington.
 Working With the Hands; Booker T. Washington.
 The Education of Henry Adams; Norris.
 The Education of Griffith Adams; Norris.
 The Meaning of Education; N. M. Butler.
 The Instructor, The Man and The Job; C. R. Allen.
 Youth, School and Vocation; Bloomfield.
 The Curriculum; Bobbit.

A Theory of Motives, Ideals and Values in Education; Chancellor.
 Principles and Methods of Industrial Education; Dooley.
 Education and The Larger Life; Henderson.
 Prevational Education in The Public Schools; Brown and Leavitt.
 Social Development and Education; O'Shea.
 Principles of Education; Ruediger.
 Growth and Education; Tyler.
 History of Educational Practice and Progress; Cubberley.
 Rural Life and Education; Cubberley.
 Evolution of the Educational Ideal; Emmerson.
 Principles of Secondary Education; Ingles.
 How to Teach the Special Subjects; Kendal and Mirick.
 Problems of Secondary Education; Snedden.
 The Boy and His Gang; Puffer.
 Problems of Educational Readjustment; Snedden.
 Moral Principles In Education; Dewey.
 Interest and Effort In Education; Dewey.
 Tendency to Concrete and Practical In Education; Elliot.
 Teachers' Philosophy In and Out of School; Hdye.
 The Ideal Teacher; Palmer.
 Trades and Professions; Palmer.
 Individuality; Thorndike.
 Changing Conceptions of Education; Cubberley.
 The Status of the Teacher; Perry.
 Economy In Secondary Education; Russel.
 The Problem of Vocational Education; Snedden.
 Harpers, Atlantic, Century, Scribner's Magazines.

B. Art Teachers' Group

The meeting was called to order at 2:30 P. M. in Room 403 of University Hall, by Professor E. J. Lake, the presiding officer. There were present twenty-four Art Teachers and Supervisors.

The first business of the meeting was a discussion of the advisability of re-organizing the Illinois Manual Arts Association, after which the motion to approve the same was made and carried unanimously.

Miss Olive Lathrop Grover of the New Trier High School, Kenilworth, Ill., gave a very interesting talk on the work of her department in that school.

A round table discussion followed and the conclusion tersely expressed by the chairman, "Learn by doing," was concurred in by all present.

A suggestion for the program for this group next year was that the committee invite people to discuss projects, in which they have been successful. The plan, followed this year in regard to meetings, be continued—united meetings in the morning and group meetings in the afternoon, and that the meeting of the Art Group take the form of a round table discussion of successful work reported by different members.

Attention was called to the "Art Extension Movement" which is being put forth in the "Better Community Conferences" of which Mr. Taft of Chicago is Chairman of the Committee, which desires that all persons in the State who are interested in the promotion of Art, especially the Art Teachers, become affiliated with the movement.

11. MATHEMATICS SECTION

The meeting of the Mathematics Section was called to order by Mr. C. M. Austin of Oak Park. Bonnie Fortney, a student of the University of Illinois, was elected Secretary to fill the position left vacant by Miss Velda Barnesberger.

The morning program was as follows: "Objectives as a Basis for Curriculum Reconstruction," was discussed by Mr. T. M. Deam, Principal of the Decatur High School. Mr. Deam spoke as follows:

Objectives as a Basis for Curriculum Reconstruction

T. M. Deam, Decatur

Last year, before a general session of the Conference, Principal R. L. Sandwick, of Highland Park, gave a report of the committee—the committee which had been appointed the year before with Dr. W. W. Charters, then dean of the Department of Education, as chairman—on reconstructing the high school curriculum. The four main objectives in curriculum construction, according to this report, should be health, wealth, association and beauty. A man has an economic life, a political life, and a social life. These different contacts or relationships with men are made possible through the realization of the objectives. High school education should impart the appreciation, knowledge, habits and skill through the avenues of daily class recitations and extra-curriculum activities. This is an attempt to picture the life interests which should be considered in a scientific reconstruction of the high school curriculum.

The commission on the reorganization of secondary education appointed by the National Education Association names seven objectives: Health, command of fundamental processes, worthy home-membership, vocation, citizenship, worthy use of leisure and ethical character.

We find that Professor Albion Small, in his *General Sociology*, named six principles of human interests. Herbert Spencer in *Education*: Intellectual, Moral and Physical, classified the various activities of human life under five headings: "1. Those activities which directly minister to self-preservation. 2. Those which by securing necessities of life indirectly minister to self-preservation. 3. Those which have for their end the rearing and discipline of offspring. 4. Those which are involved in the maintenance of proper social and political relations. 5. Those miscellaneous activities which make up the leisure part of life, devoted to the gratification of the taste and feelings."

Science, sociology and psychology are the sources out of which a desire for a change in the set program of affairs has come. Education must be expressed in terms of values. Science has multiplied the opportunities for education to function. Sociology has shown a different set of values. Psychology has changed the method. No subject, with the possible exception of language, has received a harder blow than mathematics. The attack upon formal discipline took away about the only excuse some had for retaining the subject of mathematics in the curriculum. As a result of the new philosophy there has arisen a desire for a

reorganization of the curriculum, which will most surely result in the reorganization of the content of the subject matter in the different courses. Various attempts have been made to humanize mathematics. Vocational mathematics have been written. A general mathematics has come into good repute. This whole movement is contemporary with the movement for the reorganization of the curriculum.

The N. E. A. Commission, in its report upon the reorganization of mathematics in secondary education, considered four groups of users of mathematics.

"(a) The 'general readers', who will find their use of mathematics beyond arithmetic confined largely to the interpretative function.

"(b) Those whose work in certain trades will make limited, but still specific, demand for the 'practical' use of mathematics.

"(c) Those whose practical work as engineers or as students of certain sciences requires considerable knowledge of mathematics.

"(d) Those who specialize in the study of mathematics with a view either to research, or to teaching, or to the mere satisfaction of extended study in the subject."

Another classification that has been made has been that upon the basis of retention in school. In a general analysis of the secondary school population the N. E. A. Bulletin on Cardinal Principles states that of those pupils who enter the four-year high school, about one-third leave before the beginning of the second year; one-half are gone before the beginning of the third year; fewer than one-third are graduated. Of the one-third who graduate not more than one-half goes to college: i. e., of those who enter the ninth grade, one-sixth goes to college. We have students dropping out with but six weeks, twelve weeks, eighteen weeks, thirty-six weeks, and fifty-four weeks of training.

Most school men insist that the same kind of mathematics, in the ninth and tenth years, should be taught to all irrespective of the interests and the length of period the subject is to be pursued. A change in content and point of emphasis may be made by a reorganization of the subject matter. The cycle plan has been proposed and texts have been written to meet the needs of those who drop out at the end of the ninth year or the tenth year. Shop mathematics, home economic mathematics, and industrial mathematics have been written especially for vocational courses. The traditional type of ninth and tenth year mathematics still serves very well, the college preparatory type.

We are all familiar with the splendid study that Professor H. O. Rugg, formerly of this University and then of Chicago University, and now of Lincoln School Teachers' College, New York, has made on standards in first year algebra. His preliminary study was read before this section of the Conference five years ago. If I do not mistake his purpose his aim has been to reorganize the content of secondary mathematics in such a way as to preserve and emphasize the training in mechanical processes which all of us believe essential, but also, at the same time, prevent this from becoming purely blind drudgery, which has no definite aim. The recognition of the psychological element is his contribution.

In the May number of the 1920 Teachers' college Record, Professor Truman L. Kelley has given an account and the results of an experiment in algebra with two groups of ninth year girls in the Horace Mann School. In a test applied to two groups of girls equally intelligent, in so far as the Rogers' mathematical ability test showed, and taught by two equally skilled teachers, in so far as this could be done, the advantage seemed to be with the group that studied and were taught algebra of the life interest type rather than that of the college preparatory type. While the regular college preparatory algebra was more successful in developing rigorous powers of analysis and generalizations, the inspiration, interest, culture and enthusiasm in the subject gained by the life interest group more than counterbalanced their loss.

We have been going through an experimental stage. We are still experimenting. We should continue. But I wonder if we have not arrived at a place where we can gather up some of the fruitful studies that have been made, and project these into a reorganization that will have wider approval than any one to date has received. I have been intensely interested in the preliminary report of the National Committee on Mathematical Requirements. (Secondary School Circular No. 5—February 1920—Department of the Interior, Washington, D. C.). This preliminary report has recognized two principles:

"(1) The primary purposes of the teaching of mathematics should be to develop those powers of understanding and analyzing relations of quantity and of space which are necessary to a better understanding of life and of the universe about us, and to develop those habits of thinking which will make these powers effective in the life of the individual.

"(2) The courses in each year should be so planned as to give the pupil the most valuable mathematical information and training which he is capable of receiving in that year, with little reference to the courses which he may or may not take in succeeding years."

It would seem that the comprehensiveness of this preliminary report, together with the committee's invitation to groups such as this for suggestions, is all that we can wish at this time. We are waiting patiently for the final report. It ought to be forthcoming. The fact that the report has taken into consideration in the principles stated the essence of the objectives outlined in the opening paragraphs of this paper, we feel that it should meet our approval. Personally, I would like to see this section appoint a committee, if there is not already one, with the prerogative to revise the courses in secondary mathematics as they are given in the High School Manual.

A footnote to the report just quoted refers to other recent reports—similar in my opinion to what the mathematics section of the University of Illinois High School Conference ought to attempt. I would suggest that the arrangement for a committee be considered at this session. The reports referred to are: (1) Report of the subcommittee of the Central Association (School Science of Mathematics, March, 1919, Vol. 19, pp. 259-264). (2) The Proposed Syllabus in Algebra issued by the State Department of Education of New York, 1919. (3) The report of the committee on first year high school mathematics, Association of Mathematics Teachers of New Jersey (issued by the Department of Public Instruction, Trenton, New Jersey). (4) The report of the committee on selection and organization of material in high school subjects, made at the Educational council of the Iowa States Teachers' Association, November, 1919.

Dr. Lytle, of the University of Illinois, opened a general discussion of the topic.

"The great number of values given to mathematics is spoiling the case for mathematics." This practical question was put to the teachers of the Conference: "What are the things in particular that you are trying to do in your school?"

Miss Robinson of Ottawa High School: Examinations in arithmetic and English are given to entering freshmen, and they are classified by the results of the examinations.

"Is it worth while for a student who has little or no mathematical ability to continue taking the subject?"

Mr. Van Cleave of Eldorado: We can't afford to do much experimenting in schoolwork, especially in mathematics. Interpretation

should be taught in order for a student to succeed. The old should be thoroughly understood before the new is taken up. This will do away with many of the so-called mathematical failures.

Mr. Risley of Millikin: The first thing to consider in reorganization is not to assume that too much of it needs reorganization. The system will never be perfect. When it becomes so progress will cease. We need the principles of old-fashioned arithmetic applied to the new things as they are taken up.

A suggestion was made by Mr. Deam in his paper that a committee should be appointed to draw up a practical list of mathematical requirements or minimum essentials upon which the curricula should be based.

Dr. Lytle: A committee for this purpose was appointed last year, with Mr. Felts of Carbondale as chairman. I make a motion that Miss Martin of Decatur be added to this committee, and if the present committee is not functioning, that one be appointed by the executive committee. Motion carried.

"Experimental Tests of Mathematical Ability and Their Prognostic Value." A discussion of the Rogers Tests. This topic was discussed by L. E. Wensenkamp, of Freeport, in the following paper:

Tests of Mathematical Ability and Their Prognostic Value—A Discussion of the Rogers Tests

By L. E. Wensenkamp, Freeport

As its title indicates, this paper is to be devoted to a review of Dr. Agnes L. Rogers' monograph on *Tests of Mathematical Ability and Their Prognostic Value*.¹ High school mathematics, particularly first year algebra, has probably received more attention from the testing movement than any other high school subject. Many of these mathematics tests have received wide publicity through the various school journals and through the addresses of educators, and are doubtless well known to the majority of progressive mathematics teachers. The Rogers tests, on the other hand, seem to be practically unknown to many members of our profession, possibly because in the only exposition of them which is so far available, there is involved a considerable amount of technical statistical method, which, although indispensable to the work at hand, may have proved to be rather forbidding reading for the busy teacher. These tests are, however, so different in most respects from those with which we have had the greatest opportunity to become familiar that it seems well worth while to devote a little time to an examination of them here.

It will be helpful to make a brief comparison between the Rogers Tests and some of the other tests of mathematical ability previously designed. It was the intention of their author that the Rogers Tests should measure innate ability rather than the results of training. On the other hand, the Rugg Tests in algebra with which all members of this conference are probably familiar, deal with the specific materials of class room instruction, and hence serve as measures of teaching efficiency; indeed, it was the express aim of Dr. Rugg to produce tests which would measure the *progress* which a given student or class is making in algebra. Of course, tests like these measure innate abilities also, since progress

¹Teachers' College, Columbia University, Contributions to Education, No. 89.

is necessarily dependent upon the natural endowments of the student, but it is clear that the environmental factor of class room instruction affects the scores of these tests to such an extent that they leave much to be desired as measures of native intelligence. Continued drill or painstaking elucidation on the part of the instructor may have made the material of the test so familiar to the student that a successful response can give no indication of his ability to think himself through a mathematical situation of a novel character—an ability most essential to all advanced work in this field. The same limitations hold for all other tests of first year algebra. Such tests, usually called tests of achievement, have, as has already been pointed out, a useful purpose to serve, but we need also something which will give us an accurate estimate of the capacity of the raw material with which the teacher has to work.

Most of the mathematics tests which have been published during the last few years are concerned almost exclusively with the mechanical or formal side of the work. It is on this account that they are strongly opposed by many professional mathematicians who charge that there is very little in common between the habits of symbol manipulation which the tester is emphasizing and those processes which characterize higher mathematical work. Another feature of the familiar tests is that they deal intensively with one particular department of mathematics. Thus we have, for example, the Courtis tests in arithmetic, the Rugg-Clark tests in first year algebra, and the Minnick tests in geometry. Now the engineer and the scientist do not apply the different parts of mathematics in isolation. Arithmetic, algebra and geometry, in all their phases, may enter into the solution of one and the same problem. We require, then, a combination of tests which may be applied early in the freshman year, and which will predict with reasonable accuracy the performance of the student in *all* his mathematics throughout the high school course. For this it would seem that something broader and more comprehensive than the special tests referred to above will be required. Tests which deal with the thought side of algebra must supplement those which deal with symbol manipulation; tests in geometry must include spatial intuition as well as the ability to make logical inferences, and any other activities which seem essential to mathematical thinking must be tested. Certainly an attempt must be made to include in the tests material which will typify some of the processes most fundamental in higher mathematics.

The value of such a group of tests must be obvious. Into every class room in high school mathematics, and especially into the required first year courses, where selection and elimination have not yet had a chance to come into play, there come students whose abilities cover the widest range. In most cases there is the small group of those who are foredoomed to failure; in every high school with mathematics courses at all exacting there are at least a few unfortunates who have been repeating algebra or geometry two or more times and who can never hope to become efficient enough in these branches to make the expenditure of time and effort worth while either to themselves or to society. Above this group we find another somewhat larger one, still inferior in ability, but not hopeless. Beyond this there is a middle group, by far the largest in point of numbers, whose work is usually characterized as "medium" or "fair." Next to this group are the students of more than average ability whose number steadily decreases as their ability increases. At the upper end of the scale we find a very few students who are so gifted that they can achieve success in spite of the poorest class room instruction and the most poorly written texts. It is very desirable, surely, to have at our disposal some means of determining scientifically, and at an early stage in the student's career, his innate capacity to respond to mathematical instruction. With such a means at hand we can excuse from further instruction the more hopeless ones, and can make a better adjustment of our instruction to the varying needs of the rest.

Before such tests can be designed an analysis of mathematical intelligence must be made. Modern psychology tells us that general intelligence is a highly

complex affair, a multi-dimensional structure, in fact, with a different measuring rod required for each dimension. There is every reason to suspect that the more special mathematical intelligence is complex also; for has not Poincare pointed out that there are analysts and geometers, the intuitionists and the logicians, and that the activities of all of these are indispensable to the complete product which we know as mathematics? Mathematical activity must be analyzed experimentally, then, into its components. Miss Rogers found it desirable to test as many different functions as possible which seem to be involved in high school mathematics, and then to discover in what way and to what extent these functions are related to one another and just how prominent is the contribution each makes to the complex which we call mathematical intelligence. After such an analysis has been made, the problem of selecting a group of tests, economical as to time, and easy of application, and which will make possible the prognosis of mathematical ability, can profitably be undertaken.

The procedure in making the analysis was, on the basis of introspection, to compose an extended series of tests in accordance with the requirements outlined above, and then to apply these to typical groups of high school students. The results could then be analyzed by standard statistical methods.

With regard to the tests employed, we quote Miss Rogers' thesis:² "The tests used in this study were selected or devised to touch as many forms of mathematical achievement as possible in the particular groups examined. They can be divided into three chief classes. Six are tests of algebraic abilities and with these may be grouped a test of skill in problems in arithmetic and a test of ability to reason in symbols. The latter involves the selection of relevant data in order to deduce the required conclusion and is thus akin to the type of reasoning which predominates in algebra. The second class consists of five tests of geometrical abilities, three of which measure intuitive grasp of spatial relations, one the ability to infer with spatial data, and one the ability to generalize from spatial facts.

"Several of the tests, it will be seen, resemble ordinary classroom exercises, save that they are arranged in an order of increasing difficulty and were applied under controlled conditions. The other mathematical tests were designed to measure abilities which obviously play a part in higher mathematics or which previous psychological investigators have stated to be essential factors in mathematical ability.

"In the case of each new test, prolonged preliminary trials were made, and as a result some of the tests were discarded as unreliable or impracticable. Those were retained which gave the clearest indication of being adequate measures of abilities important in the mental equipment of the student of mathematics. Eventually the follownig tests were adopted:

- | | |
|-------------------------------------|-----------------------------------|
| 1. Algebraic Computation. | 7. Geometry. |
| 2. Matching Equations and Problems. | 8. Superposition. |
| 3. Matching Nth Terms and Series. | 9. Symmetry. |
| 4. Interpolation. | 10. Matching Solids and Surfaces. |
| 5. Missing Steps in Series. | 11. Geometrical Definitions. |
| 6. Inference with Symbols. | 12. Arithmetic Problems. |
| | 13. Reasoning. |

"In addition to these tests of mathematical activities a third series of tests of language ability was given. The purpose underlying their application was to discover how far weakness in mathematics depends upon or is connected with inferiority in command of the vernacular. The tests of language ability used were the following:

- | | |
|-----------------------|------------------------------|
| 1. Mixed Relations. | 3. Trabue Language Scales. |
| 2. Logical Opposites. | 4. Thorndike Reading Tests." |

²Pages 16-17.

To give some conception of the scope of the different tests a condensed description of the majority of them is given here. For the tests themselves in all detail, and a description of the method of administering them, reference may be made to their author's monograph.

Algebraic Computation Test:

This test consists of a set of exercises typical of all courses in first year algebra. Exercises from the earlier part of such courses predominate. There is included work in the evaluation of algebraic expressions, collecting terms, simple equations, removal of parenthesis, and also a few very simple problems requiring translation of sentences into algebra.

Matching Equations and Problems Test:

This test consists of a series of verbal problems of the various types found in the earlier part of the first year work, and below them in a different order the series of algebraic equations which would be formed in the solution of these problems. The student is to match each equation with its corresponding verbal problem. This test requires no algebraic manipulation, and therefore measures the ability to translate verbal statements into symbolism as an isolated process.

Incidentally it may be remarked that of all the tests employed, these two are the ones which will be most affected by classroom training, and hence are open to the criticism that they do not isolate the innate abilities which it is the main purpose of the series of tests to disclose. The difficulties in the way of preparing such an ideal test of algebraic computation or a test of the ability to translate into algebraic symbols must be obvious; for such a test would probably have to be applied before the student had received training in algebra. The above tests are quite certain to meet the practical requirements of diagnosis.

Matching Nth Terms and Series Test:

In this test we have given a number of different series of integers, each series being derived by letting the letter in some simple algebraic expression run through the positive integers in counting order. Thus the series, 3, 7, 11, 15, 19, 23, ... is generated by the formula $4n-1$ when $n = 1, 2, 3, 4, 5, 6, \dots$. The generating formulæ of these different series are given on the same sheet, but in a different order. The student is to match each series with its generating formula.

Interpolation Test:

This test is composed of a series of arithmetic progressions with certain terms missing which the student must supply. The number of terms which must be supplied in a given series increases as we pass down the list. To make the nature of the test clear the first, eighth and twelfth series of the set are given:

$$\begin{array}{r} 1 \quad 3 \quad 5 \quad 7 \quad - \quad 11 \quad 13 \quad 17 \quad - \quad 21 \\ 2 \quad - \quad 18 \quad - \quad 14 \quad - \quad 20 \quad - \quad 26 \quad - \quad 32 \\ 4 \quad - \quad - \quad 13 \quad - \quad - \quad 22 \quad - \quad - \quad - \quad 34 \end{array}$$

In the actual test there is only a very slight increase in difficulty of each test over the one preceding it; so that by the time the second and third examples above are met, the student is in a position to infer the missing terms much more easily than would appear when these examples stand by themselves.

Missing Steps in Series Test:

This test is similar to that just described except that all of the four fundamental arithmetical operations are used in building up the different series.

Inference with Symbols Test:

This test aims to determine the degree to which mathematical ability depends upon skill in thinking in terms of symbols. The following first three exercises are typical:

Given Facts		Fill In
1. $a = b = c$	therefore	$a = c$
2. $a = b > c$	therefore	$a = c$
3. $a < b = c$	therefore	$a = c$

In this test two other symbols unfamiliar to the student at this stage in his training are used. They are $>|$, meaning "not greater than," and $|<$, meaning "not less than $>$."

We pass now to a brief description of the various tests of the geometrical group.

Geometry Test:

The purpose of this test is to determine the ability of the student to deduce geometric truths with the aid of certain given geometric principles. It will be remembered that the students for whom these tests are principally intended have not yet studied demonstrative geometry. The principles given for reference are certain elementary theorems, among them the one on the angle sum of the triangle, those on the congruence of triangles, and the one on the equality of the angles opposite the equal sides of an isosceles triangle. Using these as working facts, the student is to solve a series of exercises, each of which consists of a lettered diagram concerning which certain information is given. On the basis of this information certain results are required to be proved with the aid of the principles given for reference.

Superposition Test:

This test is intended to discover intuitive geometrical power. "It consists essentially of pairs of symmetrical parallelograms, each with one side on the same straight, long, black line and each adjoining a third parallelogram of corresponding design, and similarly with one black edge, but such that it can be superposed upon only one of the adjoining parallelograms. This third parallelogram, which has a small circle in one corner is placed in a variety of positions relative to the pair of parallelograms. The task, in

FIGURE HERE

this case was to imagine the third parallelogram moved around so that it fitted one of the corresponding pair of parallelograms and to indicate which it was by drawing a small circle in the corner of the same, exactly where the circle in the third parallelogram would then lie."⁴

Symmetry Test:

This is similar to the test just described except that the third parallelogram must now be turned over before being superposed upon one of the other two.

The two remaining geometrical tests, the *Matching Solids and Surfaces test* and the *Geometrical Definitions Test*, will not be described in detail here. Suffice it to say that the first is intended to determine the student's intuitive grasp of tri-dimensional relations and the other is to test his ability to generalize on the basis of geometric material.

Two other tests of mathematical ability were employed. One of them was a *Reasoning Test*. The following exercise is typical:

Given Facts	Fill In
M is younger than N	therefore K is L
K is older than N	therefore N is L
M is older than L	

The other was a *Graded Problems in Arithmetic Test*.

Of the four different tests of verbal ability only two need be mentioned here. The Trabue Language Scales consist of a series of sentences with cer-

⁴Page 31. All references are to pages in the monograph under review.

tain words omitted which the subject must fill in. The Mixed Relations test requires the student to supply a fourth term standing in certain relation to three given terms. For example:

eye—see
Monday—Tuesday
ear—
April—

To discover the properties of all these different tests, they were applied (1) to 53 girls in the Wadleigh High School (New York City) who had had five months of algebra but no geometry, and (2) to 61 pupils in the Horace Mann High School for Girls who had had five months of intuitional geometry and five months of formal algebra. The results were then scored by a carefully planned, objective, scoring scheme.

The data thus obtained was then analyzed by statistical methods. The Pearson "Product-Moments method" of correlation was employed.⁵ The main points concerning this method may be outlined in a few words. The aim is to measure the extent to which two traits measured in a group of individuals are correlated one with the other. Assume, for example, that a class has two sets of grades, one in algebra and one in geometry. Is there any tendency of a student's grades in these two subjects to be so related that, given one, we can estimate the other? Do high or low grades in the one subject tend to be associated with correspondingly high or low grades in the other; or is the relation of the opposite character, so that a certain degree of success in the one tends to be associated with a corresponding degree of failure in the other? Such questions are answered in an exact, objective manner by the Pearson coefficient of correlation r . In a word, this number r , calculable from a suitable formula, is an indicator or measure of the extent to which one trait measured in a group of individuals *tends to become a linear function* of some other trait measured in the same group. The number r always lies between $+1$ and -1 . If it is zero or very small, there is no evidence of such a linear relationship. If, however, r were positive and of considerable size—if, for example, it were .40 or .50 in the case of our algebra and geometry grades, we would know that they were connected so that high grades in the one tend decidedly to go with high grades in the other. The nearer r is to one, the closer is the connection. Indeed, if $r = 1$, which is the ideal case never realized in statistical practice, the correlation would be perfect; in this case if each pair of algebra and geometry grades was plotted as a point in the coordinate plane, the entire set of points would lie on a straight line of positive slope, and we could predict exactly a student's grade in geometry from his grade in algebra. When the points representing pairs of grades are more or less scattered throughout the plane, as is always the case in practice, r measures the tendency of these points to concentrate about such a line. A corresponding set of remarks hold when r lies between 0 and -1 except that in this case the two variants are so related that the larger the one is, the smaller the other which is associated with tends to be. The method just described is one of recognized merit, and was used in the study of physical traits long before it came to be applied in psychology.

Using this method Miss Rogers calculated the coefficient of correlation between each of the set of seventeen tests mentioned above and every other test of the set. The large majority of the tests gave significantly high positive correlations with the most of the other tests. This means that the mental processes brought into play by the various tests are so related that efficiency in one of them means efficiency in the other also. In most cases tests from the same group are more closely connected with each other than they are with those of another

⁵For a brief but clear exposition of the leading properties of r , see Professor Huntington's article in the *American Mathematical Monthly* for December, 1919. This article lacks numerical illustrations, but these may be found in any book on statistics.

group. The bonds connecting the different activities entering into algebraic ability are more intimate than the bonds between an activity of the algebraic group and one of the geometric group. Similarly, the tests of the geometric group gave scores which correlated more closely with each other than with the scores of the tests of algebraic ability.

Ten of the coefficients of correlation between the different mathematical functions exceed .50⁶. However, no function correlated perfectly with any other function.

The next step in Miss Rogers' work was to evaluate each of the above tests as a measure of mathematical ability. To do this, each test must be compared with some adequate and comprehensive standard of mathematical ability. Such a standard was obtained by combining all of the thirteen tests of mathematical ability described above into a single composite test. Since these tests taken together have a wider scope than any single test previously designed and since each of them does actually test some ability essential to mathematics, it would seem that such a composite would form the best available measure of general mathematical ability of the kind desired. To combine the scores of the individual tests so that they would have the proper weight in the composite was quite a complicated procedure which need not be gone into here.

It is possible to verify the accuracy of this composite as a measure of mathematical ability by comparing the results which were received when it was applied to a group of pupils with the records which these same pupils made in their school work in mathematics. This was done, and for the Horace Mann group there resulted a crude coefficient of correlation of .75.⁷ This is an exceedingly high coefficient, and we see that from this point of view the composite is certainly an accurate criterion by which to judge mathematical ability.

The next step was to discover which tests showed the highest correlation with the composite. Tests which do this must obviously touch the most salient features of mathematical ability. In this way it will be possible to select a few of the above tests which are most indicative of the outstanding phases of mathematical thinking, and then to combine them into a single test, brief enough to be of practical use in the school-room for the prognosis of mathematical ability. We shall return to the consideration of this problem a little later on.

Without going into further detail as to method, we proceed to give some of the main conclusions to which this analysis of mathematical ability led.

Since it was found that no single test correlated perfectly with the composite, no one test can serve as an adequate measure of mathematical ability.

"Algebra and geometry depend on activities of different kinds." Indeed, the correlation between algebraic ability and geometric ability is no greater than that between algebraic ability and verbal ability or between geometric ability and verbal ability. The corrected coefficients of correlation were as follows:⁸

Mathematical ability and verbal ability .....	.65
Algebraic ability and verbal ability .....	.57
Geometrical ability and verbal ability .....	.59
Geometrical ability and algebraic ability .....	.54

Such data as this makes clear the important part which the mastery of language plays in secondary mathematics. The ability to get meanings from mathematical relations verbally stated seems fully as important as the ability to manipulate symbols. It is through the ability to comprehend verbal expressions of mathematical facts that the student makes his entrance into the symbolic part of mathematics.

⁶Page 64.

⁷Page 86.

⁸Page 80.

The results we have just stated confirm the conclusions of earlier investigations based on school marks and examination papers. Again, in a recent investigation of grades obtained from several representative high schools (as yet unpublished), Professor Crathorne of the University of Illinois found that algebra and geometry were no more highly correlated than algebra and German. Such findings as these hardly lend support to those who contend that algebra and geometry should be woven together into a single course in correlated mathematics.

By the method of partial correlation Miss Rogers was able to show that the correlation between algebraic ability and geometric ability *apart from the common element of verbal ability* was only about .33.⁹

We see, then, that the functions represented by the three groups of tests for algebraic, geometrical, and verbal abilities are to a large extent independent, and each is equally essential in mathematical ability.

The following statements are from Miss Rogers' summary of the results of her analysis. "The results so far obtained lend further support to the view that mathematical intelligence is complex in character, embracing a variety of mental processes, which are somewhat loosely related, but equally indispensable for successful accomplishment in the subject. A more penetrating analysis of its general nature has still to be made." A little further on we find the statement that "while mathematical intelligence can neither be satisfactorily diagnosed, nor explained by reference to a single test or a single mental process, yet the experimental evidence we have obtained suggests that a marked degree of the power to analyze a complex and abstract situation and to seize upon its implications is the most indispensable element in mathematical proficiency."¹⁰ It is that selective faculty of the mind, "the capacity to react to partial elements in a situation," which Miss Rogers concludes is the common element operative in all the tests, and which is responsible for the positive correlations which exist between the large majority of them.

On the basis of the above analysis it was possible to proceed to the main object of the investigation, namely, the discovery of a small group of tests brief enough and convenient enough to be used in the high school for the diagnosis of mathematical ability. The problem is to make the best selection of such a group from the seventeen already described. You will remember, that a while ago I explained how all of the thirteen tests of mathematical ability were combined into a single composite and that the score of each student in this composite was taken as the measure of that student's mathematical intelligence. For the diagnostic test it was then necessary to select from all tests tried those which were most prominent in influencing the score of the composite, the degree of influence being measured by the size of its coefficient of correlation with the composite. Furthermore, those tests must be chosen which show the lowest correlation with each other; for two tests which correlate highly with each other must test the same phase of mathematical activity, and hence would duplicate each other. Tests which are loosely correlated with each other, but highly correlated with the composite must each be indicators of distinct phases of mathematical ability. Largely on the basis of the above criteria, the following six tests were selected from the available seventeen.

1. Algebraic computation;
2. Interpolation;
3. Geometry;
4. Superposition;
5. Mixed relations;
6. Trabue language scales.

⁹Page 82.

¹⁰Page 85.

This sextet of tests is for practical use by teachers. These tests measure among other things "the ability to manipulate numerical and algebraic symbols, the ability to grasp and handle spatial relations, and the ability to deal effectively with words." They can be administered in an hour and a half's time, and are very easy to score.

For the purposes in view, these tests have many advantages over the ordinary classroom test. Some of these advantages have already been pointed out, and a few others may now be mentioned. First, they have been shown by statistical methods to be reliable. This means that if they are applied two or more times to the same group of individuals, the two or more sets of scores obtained would agree closely with one another. Obviously tests for which this is not the case can be of very little value. In the second place, the tests are objective. This means that the different questions which make up each test have been so framed as to require a response recognizable as definitely right or wrong, and to this response there is attached a definite score. If the response consists of more than one step these requirements must hold for each step. If a student's replies to such a test are corrected by two different individuals, the total score obtained by each must be practically the same. Contrast with this the ordinary geometry paper which is graded according to subjective standards of the widest variability. Elliot and Starch found that one such paper received grades ranging all the way from twenty-five to eighty-eight when corrected by different teachers in schools all having the same passing grade of 70.

In the third place, the sextet of tests has a known high correlation with other tests of mathematical ability, (as embodied in the composite of thirteen) and with classroom grades. The sextet has been found to give a correlation of from .60 to .80 with the results of classroom work.

Before these tests can be useful they must be standardized. They must be tried out with large representative groups of students, and from the results obtained norms must be established, so that it will be possible to compare the score of any particular student with the average results for a large number of others of the same age and training. When this standardization has been completed, a "dead line" can be established below which a student's score cannot fall if he is to be considered a fit subject for mathematical training. On the basis of these norms students may be grouped into classes according to their ability, and instruction varied in each class to meet its special needs. The tests might also be of use to the teacher in discovering latent power in a student whose ability might not be apparent in his classroom work because some factors outside of the school were preventing him from making the proper application to his work.

These tests are meant to supplement and not replace ordinary classroom tests. They give an independent, objective check on the teacher's estimate of the student's ability and will confirm or call into question the accuracy of such estimates.

The standardization of the tests is as yet quite incomplete. The norms published in the thesis¹¹ are admittedly tentative. Recently the tests have been applied in numerous eastern secondary schools to students with varying amounts of training, and on the basis of the data thus obtained the tests are to be more carefully standardized, and the results published. These will be available, along with the tests themselves and careful instructions for their use, from the Bureau of Publications, Teachers College, Columbia University."¹²

Their author does not claim that these tests are exact measures of mathematical ability or that they represent the final word in this kind of work. It is

¹¹Page 116.

¹²The sextet of tests are available in loose leaf form at the rate of 100 sets for \$9.00. They are soon to appear in pamphlet form.

possible that a more extended use of the tests will bring to light minor defects to be remedied. It will be important to find out from a wider use of the tests if the two groups of subjects employed in the analysis of mathematical ability may be regarded as random samples from the total first year high school population of the country. Investigations with additional tests will probably bring about refinements in such work which will make it possible to probe still more deeply into the nature of mathematical intelligence. The excellent work of Miss Rogers has mapped out the main lines which future investigations of the same kind must follow.

The discussion of this paper was led by L. L. Standley of Oak Park, and is as follows:

It is the purpose of this discussion merely to call attention to a few of the important points and questions suggested to the mind of the reader in reviewing Dr. Rogers' thesis.

In the first place, these tests were not intended to replace and in no sense do replace, the Rugg-Clark tests with which we are all familiar. As previously stated in Mr. Wensenkamp's paper, these tests are devised to measure innate mathematical ability and not progress or accomplishment in mathematics. Of course there is no doubt but what in some cases training in mathematics would greatly affect the score.

A question which this thesis suggests is, "How does this mathematical intelligence which Dr. Rogers is trying to test differ from general intelligence which the Binet, Otis and Chicago Group Tests aim to measure?" Dr. Rogers found that the language tests each had a higher correlation with each of the other tests than the other tests had between themselves. Her explanation to this is that the primary characteristic in mathematical ability is the ability to read intelligently. Or as Dr. Suzzalo puts it, "Reasoning in school problems has far more to do with the language involved in a problem than with the numbers or combinations of numbers." No doubt there is great truth in this, but since many investigations show that mathematics grades correlate very highly with other school marks, we may ask if this is a special mathematical ability which we are measuring or whether it is a general intelligence. This could probably in a way be investigated by correlating the results of Miss Rogers' tests with the results of Binet and other general intelligence tests. Much of the reasoning involved in these tests appears to be as mathematical as in Dr. Rogers' tests. It seems also it would have been well to have found the correlation between the results of Dr. Rogers' tests and other school marks in these schools, such as those in English, Latin, science, etc. If the correlations had have been found negligible in these cases, then we could have said this was a special mathematical intelligence.

Another interesting thing brought out in this thesis is the tendency of age to correlate inversely with the functions measured. This signifies that the tests are indicative of qualities which cause a pupil to begin the study of mathematics young or to progress through school rapidly or both. This would be strong evidence against those who might still argue that we are crowding the child along too rapidly or giving him difficult mathematics before his mind is sufficiently mature.

Another question which appears in the mind of a reader of this thesis is, "Was this a select group of students tested?" Undoubtedly they were a much better graded group than would be commonly found, but Dr. Rogers claims that this fact is argument in her favor. She says that the correlations would necessarily be lower in homogenous groups like these than in groups less homogenous.

Some of the uses of these tests :

1. Given near beginning of high school career for purpose of classification. Dr. Rogers found that the results from these tests would foretell the pupil's accomplishment in second year mathematics three-fourths as accurately as would the results of the entire first year in mathematics. Surely such a group of tests that can be given in one and one-half hours and has such reliable prognostic value are invaluable to the teacher and administrator.

2. These tests would be of great use to the supervisor as check upon the teaching. If a pupil's results from these tests show good mathematical intelligence and yet the pupil is doing very poor work in mathematics, then this would be a case for investigation.

Miss Balch, of Evanston: The Rogers tests were given to a number of high school teachers with scores ranging from 300-150. Score for average intelligence, 150.

Dr. Lytle, University of Illinois: Correlation between mathematical ability and language ability should be emphasized. Is more discussion in mathematics classes a good thing for students? Are we neglecting the expression side of mathematical training. Help to remedy this by use of the "chalk and talk" method in class work.

"Study of Pupil's Errors" was presented by E. W. Owen, of Oak Park, as follows:

A Study of Pupil's Errors **Everett W. Owen, Oak Park**

It is not my purpose to give a long list of errors and attempt to give a definite explanation for the cause of each one and a method or device by which each particular error may be avoided, but rather to point out certain practices which occur too often in the teaching of mathematics, which make the subject of mathematics seem to pupils difficult, complicated and impractical. We are certainly leaving the impression that there is a large amount of memory work, a great diversity of operations, and many of the pupils leave the high school with the idea that algebra, in particular, is largely a matter of juggling. Examinations often show that a pupil will attempt almost any kind of problem knowing that he has no plan whatever for its solution. To see the meagerness of results obtained in plane geometry, read the results in the Minnick Test consisting of five exercises in which the pupil is merely to draw the auxiliary lines needed in the proofs. By experiment these five exercises were ranked in order of difficulty. In the first and easiest one, there are given a circle with center O, radii OA and OB; the arc AB is bisected at C and CD and CE are drawn perpendicular to OA and OB respectively; to prove that CD is equal to CE. Eighty-two per cent of the pupils taking the test succeeded in making the necessary auxiliary construction. That is, without the additional failures which would surely result in giving the entire proof of the exercise, we have a high rate of failure in the easiest of the five exercises. The last of the set of five is to give the auxiliary construction when a circle with center O and two equal chords are drawn through the point P and line OP is drawn; to prove that the angles which the chords make with OP are equal. In this exercise, 13 per cent succeeded.

Now, these results are being obtained in that subject concerning which DeMorgan wrote truthfully: "Our assurance of a geometrical truth is of a nature wholly distinct from that which we can by any means obtain of a fact in

history or an asserted truth in metaphysics. In reality, our senses are our first mathematical instructors; they furnish us with notions which we cannot trace any farther or represent in any other way than by using single words, which every one understands. Of this nature are the ideas to which we attach the terms—number, one, two, three, etc; point, line, surface; all of which, let them be ever so much explained, can never be made any clearer than they are already to a child ten years old."

To begin the discussion, let us consider a recitation in mathematics. The material being used is, in part, new, most of it supposedly known. The trend of the discussion is guided by the teacher but carried on almost wholly by the pupils. Statements attempted are made in good sentences. Each pupil is listening and hears every word of the pupil reciting, gets every idea, and, in the meantime, constructs in his own mind the speech he would make in answering the same question, sees a different way here, or a short cut there and lays these up in his mind to spring on the class at the first opportunity. The listener disagrees with the speaker about some point and resolves to ask a question about it. The pupil reciting has completed his work. The teacher does not have to wait long to see the reactions. And I need not go farther with this description except to say that a conclusion is reached about which there can be no doubt. The experience in reaching that conclusion is broad and deep.

Now recall recitations you have visited critically. What per cent of the pupils were really giving deep attention? How many had definite and complete plans for the solutions attempted? Were the steps of these plans given before the steps taken in the solution or afterward? How many of the shortcomings were due to absences? Judging by that single recitation, did you think each pupil was being held responsible for at least a minimum amount of definite work? What evidence did you see that certain pupils were entirely ignorant of the general principles involved in the discussion? How often did the teacher spoil what would have been a good recitation by a process of development consisting of a long series of very easy questions, thus taking all the joy away? How many teachers betrayed by word or action their belief that the subject was entirely too difficult for their pupils? - These questions will suggest many others and the faults suggested by these questions fully account for the majority of errors made in high school mathematics.

As suggested in the quotation from DeMorgan given above, the concepts of mathematics are thoroughly and adequately defined. In the high school mathematics we attempt to do, all the facts needed for the solution of a problem are given. The triangles, polygons, circles and other figures we discuss are perfect ones. We must know our definitions in order that we shall be sure we are all talking about the same thing. Now, a mathematical definition is an unique thing. It is given by one who has surveyed the field far ahead. It is not a matter for development by the teacher or class. It is born full-grown. The same errors may be traced to different causes, but let us look at a few due to faulty knowledge of definitions:

1. $3a + 6a^3 = 9a^4$ or $4x + 3y = 7xy$. Here is shown very little or no knowledge of the definition of like terms and the attendant method of addition.
2. $\sqrt{a^2 b^2} = a + b$. Here the definition of square root was not brought into consciousness by the symbol, for it should suggest the checking of the solution.
3. Failure in proving a given figure a square usually grows out of failure to know definitely the definitions of parallelogram, rectangle or square.
4. Failure to use the word "reciprocal" and to solve problems in which the word is used.
5. The meaning of factoring is often not understood. This underlies part of the difficulty in factoring, for the very definition of "factor" carries with it the idea of checking always.

6. Locus problems in geometry are very difficult and often not completely solved because the pupil does not understand the definition or is unwilling to work long enough to make his solution measure up fully to the definition.

Many of our difficulties grow out of the scant and imperfect training in arithmetic. We will grant at once that we must accept pupils as they come to us, for we cannot send them back to the grades and it would do these individual pupils very little or no good and, quite likely, harm, if we did. But there should be greater cooperation between the grades and high school. The effectiveness of our teaching cannot be determined in the immediate present. The true test is what our pupils are able to do in the work that follows ours and in life. Certain habits are formed in the grade schools or not at all. Certain kinds of drill work can be done in the grades with keen enjoyment that cannot be done satisfactorily in the high school. It may be that the National Committee do not emphasize this fact sufficiently in the curricula for junior high schools they have suggested in their preliminary report and that plans are being suggested which are too full of new things to the detriment of necessary drill work. The establishment of junior high schools will make it possible to hold the pupil responsible for a reasonable standard of work in each subject to a degree that has not been done under the old system. It is almost certain that if a pupil enters the high school able to pass satisfactorily the Stone sixth grade reasoning test under reasonable time conditions, he will succeed in his first year mathematics.

If one compares a text in either algebra or geometry of the present days with an older one, he is struck by the fact that greater emphasis is placed upon the graph and other agencies for visualizing the abstract facts of algebra or geometry. But this practice must be pressed still farther and the National Committee in its preliminary recommendations as to the curricula for junior high schools is recommending a wealth of this sort of material. The failure to visualize the situation in a problem and to represent algebraic expressions by lines, angles, areas, etc., lie back of many of the errors and failures in algebra and geometry. To illustrate this, I cite just a few cases:

1. A simple problem like this is given early in algebra: "The length of a rectangle is three times its width and its perimeter is 108 yards; what are its dimensions?" If it is the first time such a problem has come up, several in the class will state the equation $4x = 108$. Tracing in the air the boundary of such a rectangle will usually cause the correction of the mistake, but also proves that the pupil reads merely words and failed to visualize the situation.

2. A pupil who has acquired the habit of visualizing an algebraic expression such as $3(a + 2)$ by means of a rectangle will not be likely to say that the product is $3a + 2$. If he represents the expression $x-1$ by a line made up of the difference of two lines, he will understand the difference between $x-1$ and $1-x$.

3. We may also visualize algebraic expressions as such. If a pupil says that $\sqrt{18} = 2\sqrt{3}$ instead of $3\sqrt{2}$, he has very probably failed to visualize the intermediate expression, $\sqrt{9\sqrt{2}}$.

4. Visualization is a great aid in the solution of nearly all so-called verbal problems.

The language or expression side of mathematics has been sadly neglected. Pupils go far into algebra and geometry courses without being able to use quickly and accurately such very simple terms as sum, difference, product, quotient, factor, greater than, less than, more, less, times, etc. Of course failure to use these terms readily and accurately means that pupils cannot understand the discussions in the text when a new subject is introduced. The teachers have yielded to this and "develop" for the pupil each new principle. It is becoming increasingly difficult to get pupils to acquire very simple explanations from the textbook. This trouble is augmented by the fact that the majority of our textbooks present long lists of problems with scarcely any originality or individuality. Each problem is like the preceding one, only longer. No use of a mathematical vocab-

ulary is necessary in order to solve them. Getting the answer is made the all in all. The fact that mathematics is a method of quantitative investigation or the "science of necessary conclusions" is lost sight of. Then, too, the absolutely necessary vocabulary has been needlessly complicated by bringing in unnecessary terms such as "cancel," "transpose," "clearing fractions," etc. There are just four fundamental operations in mathematics and every process can be defined in terms of these. If a pupil lacks knowledge of a mathematical vocabulary, he will have difficulty in formulating his plans for solutions. To illustrate my point, I need only ask: What per cent of pupils in algebra can express in a clear sentence the thought expressed in the statement that $a^m \cdot a^n = a^{m+n}$? We have been especially careless about teaching the importance of proper notation. Many a pupil is led to solve a verbal problem merely by asking him what the unknown numbers in the problem are and asking for a representation for them. Even some texts are careless in letting a letter represent a concrete instead of an abstract number. As a part of teaching proper expression, the results of a solution should always be properly labeled.

We have failed to impress pupils with the simplicity of our subject. That is, we have failed in organizing our material. For example, we do just three things in algebra:

1. Transform algebraic expressions.
2. State and solve functional relations or equations.
3. Check solutions.

The first includes all the fundamental operations, factoring, fractions, powers and roots, and simplifying radicals. The second includes the statement and solution of equations. These equations, in beginning algebra, are merely simple equations in one and two unknowns and quadratic equations in one unknown. In other words, the first yields identities; the second, equations. Identities are satisfied by any values of the letters involved; equations by particular values of the letters. But in nearly all our texts, after giving the definitions and a few illustrations, this matter is dropped and never referred to again. Perhaps the following will be familiar to a few teachers:

1. Changing a perfectly good problem in addition of fractions into an equation.
2. Placing equality signs between the steps in the solution of a simple equation.

$$3. \text{ If } x^2 + 5x = 6, x = \frac{6}{x+5}?$$

In the attempt to modernize arithmetic and algebra, we have gone to the extreme in saying that problems should not be more difficult than those of everyday life. The result is that pupils learn to solve these problems mechanically without becoming conscious of the fundamental principles involved. If you do not believe this, have a pupil chalk-talk his solution of a problem in addition or subtraction of fractions before you attempt to teach fractions in algebra. After solving many problems like $a^2 \cdot a^3$, give a problem like $(x+y)^m \cdot (x+y)^n$ or $2^3 \cdot 2^5$. If the theorem involved has been clearly understood and stated, he should have no trouble. A large number of errors have their origin here.

The process of automatizing certain processes needs to be further studied. It seems to be the idea with some writers that making an operation automatic means substituting a short method, or a mechanical one, for an original one. For example, we find them developing the method of subtraction from the definition and then giving the rule, "change the sign of the subtrahend and add." This confuses the pupil and does not add to his speed. Then the first method inherently causes him to check his work and the second does not. I suppose the word "cancellation" crept in in some such way and many errors cluster around

that word. You will readily recall other illustrations. What we need here is not to change methods, but to give a large amount of drilling under time conditions, with, perhaps, a separate text for drill work.

We have considered very briefly the following points which account, in part, for a large number of errors and failures:

1. The method of recitation.
2. Lack of respect for mathematical definitions.
3. Inadequate knowledge of elementary arithmetic.
4. The need of visualization.
5. Neglect of use of mathematical language.
6. Organization of material.
7. Failure to get general principles.
8. Methods for making operations automatic.

No claim is made that these are arranged in proper order, that they are independent or that the list is complete.

Discussion:

Mr. Schriber, Proviso Township High School, Maywood: A vital issue is the ability to understand and comprehend the English language and to translate it in mathematical terms.

Dr. Lytle: Many errors are due to lack of appreciation of mathematical form.

Mr. Wensenkamp: A systematic study of errors should be made and a list of these given to beginning teachers so they will know what to emphasize in their teaching. (This will be part of the work of the committee mentioned above.)

Miss Jessie Brackensiek, of Quincy, acted as chairman of the afternoon session.

J. A. Foeberg, Vice-Chairman of the National Committee on Mathematical requirements, gave a report of the work of that committee: "WHAT ARE THE REASONABLE THINGS TO EXPECT OF THE HIGH SCHOOLS IN MATHEMATICS, was presented by H. P. PETTIT, University of Illinois. His paper follows:

The few things which I have to say on the subject of "What Are Reasonable Things Which the Colleges May Expect From the High Schools?" are, of necessity, an expression of my own views developed from experience in both fields of teaching.

I shall say comparatively little concerning the pure material content of the courses taught, as I feel that that is a matter which has been rather extensively and carefully set forth by men who are in all likelihood better fitted to deal with that question than I.

Aside from the mere content of knowledge, there are certain rather essential things which may reasonably be expected of students entering college. The first of these is arithmetical accuracy. Imagine the delight with which a college instructor in Mathematics finds students making such blunders as multiplying seven by nine and getting fifty-six, or adding three and nine and getting eleven. More accurate work than that should rightly be expected of students in the Grammar grades, and yet, it is no uncommon thing for such mistakes to happen in the college classroom, at least among freshmen students.

In the question of Algebra the student entering college should have a command over the fundamental ideas of the subject such as to enable him with a short review to use the tools of the subject with fair speed and accuracy. That is, he should be able to handle rapidly and accurately such fundamental things as simple exponents, fractions, addition, subtraction, multiplication and division, the solution of linear integral and fractional equations, factoring and the solution of the quadratic. But only too often are students to be found in college classes who must be taught practically all of this. These are fundamental things and belong properly to the training of high school.

As for geometry, according to my own observation, there is too prevalent an idea that this is a memory course. The teaching of geometry should be made a real course in logical reasoning. Too many students pass through the study of geometry with an effort to remember theorems and demonstrations without in the least grasping the idea of the logical development or sensing in the least the beauty of form and symmetry which is there for the discerning to see. I do not mean to say that theorems should not be learned. Quite the contrary, but they should be considered as parts of a structure instead of as mere statements learned as a pure feat of memory. Their dependence on preceding theorems and their importance in relation to succeeding theorems should be noted and emphasized. The student who comes out from a course in geometry with nothing more than a mass of more or less interesting facts has not received full value from the work. The ability to carry through and develop a logical bit of reasoning is one thing which should be expected of a student properly trained in geometry.

One thing further should be mentioned. It is a rather noticeable fact that many students are entering college who lack the ability to take a text book in which an author has clearly and carefully developed his subject, and to dig out, on their own initiative, the content of the work. It is regrettably true that many textbooks are on the market today which are so poorly written as to make this a difficult feat for the average student. But with a well written text a properly trained student should have the power to dig out an author's meaning for himself. This serious defect is, I believe, due in large part to the tendency in these days to make school easy for the pupil. We so eagerly smooth out the path for our students that when they reach real difficulties they have not developed the power to attack the obstacles independently and become too easily discouraged.

It is not unreasonable to expect that students shall enter college without a fixed prejudice against mathematics. A teacher who has no strong interest in a subject will not inspire his students to follow that subject when once they have gotten beyond the requirements of school curricula. A teacher who is partly prejudiced against a subject will consciously or unconsciously communicate that prejudice to the students with whom he comes in contact.

To summarize; there are four essential things which the colleges may reasonably expect from the high schools:

1. Arithmetical accuracy.
2. Knowledge and skill in algebraic fundamentals.
3. Ability to reason logically.
4. Ability to use a textbook independently.

The question was further treated by MISS FLORA E. BALCH, Evanston, as follows:

What is reasonable for the college to expect from the high school in mathematics?

What the college should expect from the high school in mathematical training falls into two classes.

- a. What should be expected from the student as college entrance requirements if he does not elect any college mathematics?
- b. What should be expected from the student who continues the study of mathematics?

The first is much more vital to high school teachers, but the second is the one with which we are chiefly concerned this afternoon. It would be *very* unfortunate to fail to recognize these two groups, and to require of all students entering college the mathematical preparation necessary to continue the study of the subject.

What should be required of every pupil without regard to his future should correspond to what is known as the minimum requirement. He should have completed, at the most, one year's work in algebra and one year of plane geometry. This work should have been of such nature that he has obtained the most valuable training possible in the allotted time.

The first year's work in algebra should include whatever of elementary algebra may be of possible use in everyday life. The pupil who leaves school at the end of the ninth year, or who does not continue the study of mathematics, should gain sufficient preparation for the needs of the average citizen, either for practical or cultural purposes. The emphasis in the first two years' work cannot justly be put on preparation for college mathematics. It is a trying-out period for many; for many it is the last mathematics they will ever study. The elementary algebra should be sufficient for the solution of any exercises in geometry involving algebra, and should be the proper foundation for the work in algebra, usually given in the third year.

If it has been found in two years of high school work that a pupil has not even average ability in mathematics, he should be advised not to put more time on the subject, either in high school or in college. It should be evident to him and to his parents that his future study and his life work should be along lines which do not involve higher mathematics. The secondary schools and colleges of the United States can never hope to accomplish as much in mathematics as the European schools until we stop trying to force every student through so much of a subject for which many of them have no natural aptitude. When the time comes that we have a select group in the third and fourth years of the high school, we shall find that the American boys and girls can go as far in mathematics as those of any other country. What the college may expect then will be a different matter.

The first step in this direction is for the colleges to simplify the minimum requirements for entrance for the general body of students, but to make further study in high school prerequisite to college courses in mathematics.

The work of the ninth year should cover three topics:

- a. The formula.
- b. The equation.
- c. The graph.

Emphasis should be put upon:

- a. Accuracy.
- b. Correct form.
- c. Facility in the translating from words to algebraic symbols, and vice versa.

Boys and girls of this age should not be expected to unravel long, complex combinations of fractions and fractional equations, intricate and impractical cases of long division, radicals, nests of parenthesis, etc.; but they should be most proficient in handling the fundamental operations in a reasonable form, and in the solution of an equation.

It is essential that each pupil know how to substitute in a formula and solve the resulting equation. This one thing is really practical. He should

be able also to solve for any letter of the formula in terms of the others. The second point is not so important as the first because if he can substitute correctly he should be able to simplify the resulting equation and solve it.

The solution of the equation should be the very heart of the work. All the mechanics of algebra are a means to this end, but the pupil should be so familiar with them that he can give all his thought to the solution of the equation. In one year he can easily master the solution of the linear equation, quadratic equation by factoring and completing the square, linear systems in two unknowns by one method, and systems with one linear and one quadratic equation.

He should be able to solve fractional equations, with most of the emphasis put upon equations with monomial denominators. Some time may be given to those involving monomial and binomial denominators or two binomials, but it is not sensible to concoct more difficult and more complicated cases than a pupil will ever have any use for. We need to get away from the old idea that algebra is a "whetstone of witte." Much of the work with fractions given now could be defended only in some such manner.

The student should be well trained in the solution of verbal or stated problems. These should be real problems to as great an extent as possible. By a *real* problem I mean one that somebody would have some use for sometime. Anyone who has thought about it at all or tried to find a real problem knows that they are very rare. If the problems are not real in an everyday sense, we can find an abundance of those that are real in the sense that they are used in other subjects such as geometry and physics. It has been agreed that the problems which are real to the adult are no more real to the child than the average puzzle problem. By a puzzle problem I refer to such problems as age and digit problems. I am not advocating doing away with these by any means; but I do think that the pupil should know that they are not offered for any practical purpose, but only because they are interesting historically and because of this puzzle element.

The graph has a very evident practical value. It is so commonly used today in advertising, in quoting the market, in illustrating articles dealing with statistics, that the average citizen should have some knowledge of how to read and make a statistical graph. The algebraic graph is of great value as a means of explanation. By its use the operations with the negative number are made plain, the solution of the linear equation, the reason for calling it *linear*, the number of roots a quadratic has, why some pairs of linear equations have no solution, while others have many solutions or only one. All of this material comes easily and naturally in the first year's work. It makes for clearness and creates interest.

To the three topics which I have emphasized, I should like to add that of ratio, proportion and variation. The abstract treatment of proportion has no place in the first year's work, but the idea of direct and inverse variation is practical and involves nothing more than the solution of an easy fractional equation. The work with ratio and proportion involves drawing to scale, finding the distance between two points, finding the heights of buildings, and other interesting problems of a practical nature.

This work leads to the trigonometric ratios. For such an elementary treatment of the subject as is possible here, it is only necessary to teach the sine, cosine and tangent and the use of a table of natural functions.

Several reasons may be given for introducing this in the first year:

1. It affords an interesting practical application of algebra.
2. It gives the pupil further insight into the field of mathematics.
3. It is worth while for the boy or girl who leaves school at the end of the ninth grade to know something of the elements of the subject.

The work of the tenth grade has been for many years plane geometry. The tendency seems to be to leave it there, but to change quite materially the nature of the work. Many teachers advocate introducing the work through intuitive geometry. An effort certainly should be made to make the pupils realize how much geometry is used in the world around them. Why is the triangle used so commonly in construction work? Why does the rectangle occur so frequently in buildings? Why are coins round? Why does the bee build a hexagonal cell? How can similar triangles be used to find the height of a building?

In intuitive geometry the topics of symmetry and similarity may be used to advantage. Examples of symmetry can be found all about in nature and architecture—the leaves of the trees, the hands and face, the plans of a building, etc. Similar figures are also common in the pupils' surroundings in such simple forms as the image on the plate of the camera, the use of the pantagraph for enlarging a picture or pattern, the floor plan of a house, etc.

It seems desirable to many teachers to cut down the number of theorems to be proved, and to increase the number of original exercises. Disciples of this movement advocate postulating many of the theorems now proved, arguing that their proof is so simple that the pupil doesn't feel that he has proved anything, or that the theorem itself is not used enough to pay for the time it takes to master the proof. Some urge that there are about forty theorems worthy of proof; the national committee on mathematical requirements has placed the number in the neighborhood of sixty. Whether we prove forty or sixty or one hundred, is not the real issue.

1. The most important thing to consider is whether the pupil has mastered the nature of deductive proof.
2. He should develop a geometric imagination and acquire a geometric vocabulary.
3. He should gain some facility in applying different methods of attack to original exercises.
4. He should be able to give exact statements of the fundamental theorems.
5. He should be urged to use an algebraic proof wherever possible.
6. He should be led to see that many theorems are only special cases of one big general proposition, i. e.: "The angle formed by any two lines intersecting within a circle is measured by one-half the sum of the intercepted arcs." This is the general form for all theorems on the measurement of angles, inscribed, central, angles formed by two chords, by two secants, by two tangents, by chord and tangent, by tangent and secant, and even for the arcs interrupted by two parallel lines, if the point of intersection is carried to infinity.

It is entirely possible to give a high-school pupil some idea of infinity in such a manner, and if the teacher is watching for it, he will find many places where the idea comes in naturally. It is also entirely possible to suggest to a high-school pupil the idea of a world of more than three dimensions. If a point, a figure with no dimensions, is moved, a line or figure with one dimension is generated; if the line is moved, a surface, or figure of two dimensions, is formed; move the surface and a solid, or three-dimensional figure is formed; then, if a solid is moved, what kind of a figure is generated?

If two lines are symmetrical with respect to a point, they may be made to coincide by revolving through a plane. If two plane figures are symmetrical with respect to a line, they may be made to coincide by revolving through three-dimensional space. If two solids are symmetrical with respect to a plane, how may they be made to coincide?

In the third year of high school, the work should be elective. With a select group of students who expect to make some use of mathematics, results that are worth while may be obtained. Those who have shown good average ability in the first two years should be advised to elect the algebra of the third year. Those below average should be encouraged to follow some other line of study.

We have agreed (?) to do away with complicated problems in elementary algebra, but in the third year we may indulge in some mental gymnastics if we so desire. If we, as teachers, looked back over our own experience in studying advanced mathematics, we should find it hard to discover any cases where we needed to simplify such complex fractions or such involved exponents as we drive the high school pupil over, and as the colleges put on their entrance examinations.

The elementary algebra should give a pupil a mastery of the tools of algebra; the algebra of the third year offers an opportunity for developing more of the theory and applications of algebra. In factoring, the remainder theorem, grouping and other complicated forms may be considered. Some of the topics to be included are:

1. The theory of exponents.
 - a. The meaning and use of the zero, negative and fractional exponents.
2. The theory of the quadratic equation.
 - a. The nature of the roots.
 - b. The solution by the formula.
 - c. The algebraic and graphic solution of systems of quadratic equations.
3. The binomial theorem.
 - a. Its proof for positive integral exponents by mathematical induction.
 - b. Its application for any exponent.
4. Systems of equations in three and more unknowns by the use of determinants.
5. The imaginary and complex number.
 - a. Fundamental operations with it.
 - b. Its graphic representation.
6. Progressions, arithmetic and geometric.
 - a. Application of these.
7. Ratio, proportion and variation.
 - a. Their theory.
 - b. Applications.
8. Use of logarithms and the slide rule.
9. Radical equations.

At the end of this half-year of algebra, the student should have a good degree of accuracy in mathematical manipulation, the ability to translate easily any verbal problem into algebraic symbols, a knowledge of the theory of elementary mathematics, and some vision of the mathematics that is to come.

In many of the smaller high schools this is all the mathematics that it is possible to offer. It should be sufficient, if well taught, for a ground work for the mathematics given in the first year of college. In schools with a larger staff of teachers, there is no reason why courses in solid geometry, plane trigonometry, elementary analytics, astronomy, and advanced algebra should not be offered.

No instructor should expect a student to retain all that he has learned in a preceding course. Some time must be allowed for review and the reestablishing of former habits of thought. We can not expect the teachers who went before us to smooth our path for us entirely, no matter how hard they try or how

efficient their work may be. It is traditional for every group of teachers from the college to the kindergarten to blame the preceding group for the shortcomings of the student.

The college should reasonably expect, then, that any one entering a class in college mathematics has had a year and a half of algebra, made up of drill on the necessary mechanics of algebra and the elementary theory of the subject, and a year of geometry, intuitive and demonstrative. It would be reasonable to expect that these have been taught to the best of the teachers' ability, and with a little time to adjust himself to a new environment and to review the fundamentals of mathematics, that he will give evidence of the sincere effort of the high school teacher to prepare him for his college work.

BUSINESS

Mr. C. M. Austin, Chairman of the Executive Committee of the National Council, presented matters of the council to the teachers of the conference.

The need of this organization to secure better cooperation among the teachers is shown by the complaints that are continually coming in, of the present day methods of teaching mathematics. The teachers of the Council will have an opportunity of expressing their opinions through the pages of the Official Journal, "The Mathematics Teacher." The slogan for the Council is, Publicity, Cooperation and Progress. Membership is of two kinds: Individual and collective. A motion was made and carried that this mathematics section become a collective member of the council, and the membership fee was collected.

Mr. Schrieber presented the following report of the Nominating Committee: Mr. L. E. Wensenkamp of Freeport, member of the Executive Committee for a period of three years. Miss Bonnie Fortney, Secretary of Mathematics Section for a period of two years. A motion was made and carried that the report be adopted.

The Executive Committee is:

Mr. C. M. Austin, 1921, Chairman, Oak Park.

Mr. Felts, 1922, Carbondale.

Mr. L. E. Wensenkamp, 1923, Freeport.

The following motion was made by Dr. Lytle:

In order to make a permanent record of an old practice, I move the adoption of the following minute:

The officers of the Mathematics Section of the University of Illinois High School Conference shall be an Executive Committee of three members, one member being elected each year for a term of three years. The senior member shall be chairman and be responsible for the program of the section meetings; the second in seniority shall be presiding officer of the meetings (it being understood he may request another person to preside if he wishes). A Secretary shall be elected for a term of three years.

In case any office shall become vacant, the Chairman of the General Conference Committee (at present Professor H. A. Hollister) shall have power to appoint some member to fill such vacant office, this appointee to serve until the next meeting of the Section, when all vacancies shall be filled by election.

ERNEST B. LYTLE.

Motion carried.

12. MODERN LANGUAGE SECTION

The Modern Language Section of the Conference met in Bradley Hall Friday morning with Miss Doniat of Chicago presiding. Miss Whitten of Normal was appointed Secretary, and asked to fill out Miss Olson's term of service on the Conference Committee, since, as was announced by Professor Fitz-Gerald, Miss Olson is spending the year in France. Further announcements in regard to details of the Conference were made by Professor Fitz-Gerald and Miss Doniat, and the section then proceeded to the program of the morning, as follows:

Objectives as a Basis for Curriculum Reconstruction, Mr. H. D. Hughes, Principal of Hinsdale School, Hinsdale, Illinois.

Objectives as a Basis for Curriculum Reconstruction

H. D. Hughes, Hinsdale, Illinois

Ladies and Gentlemen:

I feel that a word of explanation is in order as to why I, who am in no sense of the word a modern language student, and whose only modern language training consists of two years of high school German, should appear before this section. The problem of the curriculum is as old as the oldest attempt at systematized education and I do not suppose there has ever been a gathering of school people of any especial significance which did not concern itself with the problem of curriculum reconstruction. I do not suppose that there will ever come a time when school people will not have to concern themselves with the problem of curriculum reconstruction for changed conditions bring changed needs and since society is not static so a curriculum cannot be a fixed thing.

We have always worked at the curriculum, but there is a feeling on the part of many that most of this work has been haphazard and pointless, that we have shot in the air without any particular aim, and that what changes we have made have been the too often an ill advised response to passing fads and fancies and have not grown out of clear educational philosophy. With curricula tremendously overcrowded, with clamorous demands being made for the admission of new subjects, and with the perfectly patent fact that what might almost be called a reconstructed and a reconstructing world would test to the limit the flexibility of curricula, it seemed that there should be worked out some philosophy determining curriculum making and some technique for applying this philosophy.

Accordingly various educational committees have tried to determine the aims of high school education. The N. E. A. appointed a committee on the reorganization of secondary education which published its report under the title, "Cardinal Principles of Secondary Education." This report, issued as Bulletin No. 35 of the Bureau of Education, is one of the most important reports ever published by that bureau. It lists seven cardinal principles of education: 1.

Health. 2. Command of fundamental processes. 3. Worthy home-membership. 4. Vocation. 5. Civic education. 6. Worthy use of leisure. 7. Ethical character. At the conference last year the Organizing and Advisory Committee for Curriculum Reconstruction presented, as high school objectives, health, wealth, association, beauty, adaptation of Dean Small's six fundamental human interests; health, wealth, sociability, beauty, knowledge and righteousness. This year Dr. Hollister asked that representatives of the administrative section should appear before each of the other sections and stress the necessity of using objectives as a basis of curriculum reconstruction. It is for that reason that I am here. It was agreed among the men selected to present this subject to the various sections that we would not stress any particular set of objectives, but simply the necessity of having objectives. There are those who feel that the objectives' health, wealth, association and beauty are too remote to be usable and helpful; there are those who think the seven cardinal principles of education laid down by the N. E. A. committee are ill considered; there are many who formulate objectives differing from each of these reports. But the important thing is that we have an objective; that we have some idea where we are going while we are on our way. And when once some set of objectives is determined upon every subject should be evaluated on the basis of the part it plays in the attaining of these objectives. Objectives should determine not only whether a subject already in the curriculum should be retained, whether it should be a required or an elective, whether the amount of time given to it should be increased or diminished, and whether a new subject should be admitted, but they should also determine the content of the courses and the technique of instruction. This, of course, all goes without saying, but it is an exceedingly valuable exercise for a teacher to try to formulate the objectives of education, try to determine the part her particular subject should play in the attaining of these objectives and test the subject matter of her courses and the technique of her instruction in an effort to see if they are realizing the ends desired.

It would be presumptuous of me to try to outline for you courses in modern language or suggest methods of class room procedure, but I would like to say that there is great danger, it seems to me, in laying too much stress upon what the student is going to do with the subject after he leaves your instruction. For example, I was in a class under the head of the department of education of a great university who said that the aim of teaching modern language should be to give the child a reading knowledge of the language, that not one in a hundred would ever be called upon to speak it, and that one would be called upon to speak it only under conditions which would make it easy for him to learn how to speak it. It seemed to me that his view of the case was logical, and, therefore, when later as a principal I had to listen to the complaints of patrons over the pronunciation of our French teacher, I would set forth the views of this professor of education and urge that pronunciation was of no importance anyhow. And then I ran across people who held exactly the opposite view, people who said, "whenever the boy reads something he will unconsciously pronounce it and he must have some standard of pronunciation." And the objective desired determined in each case the content of the courses and the technique of instruction. And gradually it came to me that in thinking what the student was going to do with the subject after he left our classes, what practical use he was going to make of it, there was danger of losing sight of the thought of what he was doing with it while he was in our classes, what was going on inside the boy there and then. I remember, if you will pardon the personality, my high school class. There were fourteen of us. I think we all took two years of German. Two of us went on to College, one of the girls and I. She continued her study of German. I did not. She has never been called upon to speak German. I doubt if she has ever read a single German book other than those required in her classes. I have never been in a situation where I needed to speak German. I have never read a German book other than those we

read in high school. I am sure the same is true of all those who did not go to college. Did it pay for the fourteen of us to take two years of German? Judged from the practical use we made of it afterward, no; judged from what it did to use then and there, yes. School is not so much a preparation for life as it is life itself and I submit that any philosophy of curriculum reconstruction which concerns itself so much with what the student is going to do that it ignores his present interests is as faulty as the philosophy which regards this world only as a preparation for the next. It was worth studying two years of German simply to be able to read "Immensee"—The subject justified itself at the time.

And I submit further that if we are going to concern ourselves a great deal with the present interests of the child, then we must arrange the content of our courses and the technique of our instruction to give to the child the maximum of pleasure and of present profit. For several years after I left high school I used to read "Immensee" at least once a year, and I read a great deal of it aloud. I do not think that my pronunciation of the German was very good, but at least it was a pronunciation that served the purpose of giving pleasure to me. I loved the sound of the words as they rolled off my tongue and I am grateful to the teacher who thought it worth while to spend a lot of time on one classic and gain for us an approximation to mastery of it. I have never been much of a believer in the theory of extensive reading and I have never found a class of students who did not prefer intensive to extensive work, and the test of successful language instruction is whether the students like it or not. I am not so much concerned as to whether students are going to speak it or whether they are going to read it; what I am concerned about is, how much pleasure, and stimulation, and inspiration is coming to them from this subject, here and now.

To summarize. I have tried to make these points:

1. The problem of curriculum reconstruction is ever with us.
2. Curricula should be reconstructed on the basis of objectives.
3. Teachers should try to formulate the objectives of education to determine the part their subject should play in the attaining of these objectives, and then test the content of their courses and their methods of instruction to see if they are furthering the desired ends.
4. Any philosophy of curriculum reconstruction must concern itself with the present as well as the future interests of the child, and
5. Lastly, in modern language, the chief concern is not what the child is going to do with the language at some future time, but what is the language doing to the child, here and now, how much pleasure and profit is it bringing to him now?

There was no discussion following this paper.

Observations on the High School Teaching of Foreign Languages,
Mr. A. W. Clevenger, Assistant High School Visitor.

Observations on the High School Teaching of Foreign Languages **A. W. Clevenger, University**

During the World War many educators were wondering what effect this great conflict would have on the program of studies of the high school. There were many who expected a complete reorganization not only in the program of studies, but in the course of study of the various subjects composing that program.

In France, England and Germany many changes have been effected. The work of the secondary school is being reorganized to include studies which will

help to solve the problem of rehabilitation of the demobilized forces. There is a tendency, too, toward a more scientific administration of education than that which existed before the war. In America the lessons taught by the methods of education employed in the Army are just beginning to have an effect. At present the methods of instruction being used in the Regular Army and those in use in the camps where wounded soldiers are receiving instruction planned to fit them for useful work, represent a very great departure from the methods of instruction common to secondary education. The results which are being attained promise to have a far-reaching effect. It appears that the effect of the World War on secondary education is just beginning to be felt in America.

There is perhaps no greater change in any field of education brought about by the war than the change which has already taken place in the field of foreign languages. Upon the entry of the United States into the War the study of the German language was dropped from the program of instruction of most of the high schools and in some states, as in Indiana, this elimination was effected by means of state legislation. The tendency in Illinois was to permit pupils who had begun the study of German to continue their work in the course in cases where the credit was necessary for graduation. Many pupils, however, chose to drop German and lose credit rather than to invite criticism. French and Spanish were rapidly introduced to meet the calls for modern language study. A comparison of the number of accredited schools receiving foreign language credit in the school year (1915-16), with the number of accredited schools receiving foreign language credit in the school year (1919-20), is indicative of the trend in the field of foreign languages.

Changes which have taken place in the number and per cent of secondary schools accredited by the University of Illinois in foreign languages since the school year (1915-16) :

LATIN ACCREDITED BY THE UNIVERSITY OF ILLINOIS

	School Year	One Year	Two Years	Three Years	Four Years
Number of Schools...	1915-16	1	55	60	246
Number of Schools...	1919-20	0	119	57	243
Per Cent of Schools...	1915-16	0.3%	15.0%	16.0%	66.0%
Per Cent of Schools...	1919-20	0.0%	25.0%	12.0%	51.0%

NOTE—Public High Schools of Chicago are not included.

GERMAN ACCREDITED BY THE UNIVERSITY OF ILLINOIS

	School Year	One Year	Two Years	Three Years	Four Years
Number of Schools...	1915-16	11	191	81	28
Number of Schools...	1919-20	2	124	54	36
Per Cent of Schools...	1915-16	3.0%	51.0%	21.0%	7.0%
Per Cent of Schools...	1919-20	0.4%	26.0%	11.0%	7.0%

NOTE—Public High Schools of Chicago are not included. This table does not show the real change which has taken place in German. Many schools wished to retain credit in German in order that a few pupils might receive the credit needed for graduation. A few schools wished to retain credit in German with the idea of starting new classes at the close of the war. Only a few schools now have classes in German. At the present time there seems to be a tendency for the study of German to be introduced again. It is quite probable that German will slowly be re-instated, taught by modern methods and with new motives.

FRENCH ACCREDITED BY THE UNIVERSITY OF ILLINOIS

	School Year	One Year	Two Years	Three Years	Four Years
Number of Schools...	1915-16	2	19	18	3
Number of Schools...	1919-20	21	189	32	24
Per Cent of Schools...	1915-16	0.5%	5.0%	5.0%	0.8%
Per Cent of Schools...	1919-20	4.0%	39.0%	7.0%	5.0%

NOTE—Public High Schools of Chicago are not included.

SPANISH ACCREDITED BY THE UNIVERSITY OF ILLINOIS

	School Year	One Year	Two Years	Three Years	Four Years
Number of Schools...	1915-16	1	4	2	0
Number of Schools...	1919-20	15	49	11	3
Per Cent of Schools...	1915-16	0.3%	1.0%	0.5%	0.0%
Per Cent of Schools...	1919-20	3.0%	10.0%	2.0%	0.6%

NOTE—Public High Schools of Chicago are not included.

GREEK ACCREDITED BY THE UNIVERSITY OF ILLINOIS

	School Year	One Year	Two Years	Three Years	Four Years
Number of Schools...	1915-16	2	7	12	0
Number of Schools...	1919-20	0	11	10	0
Per Cent of Schools...	1915-16	0.5%	2.0%	3.0%	0.0%
Per Cent of Schools...	1919-20	0.0%	2.0%	2.0%	0.0%

NOTE—Public High Schools of Chicago are not included.

In addition to the above languages there are two schools which receive credit in Swedish, four receiving credit in Italian, one receiving credit in Bohemian and one accredited in Polish.

The per cent of schools offering Latin has decreased from 99.8% to 87.4% since 1915-16. The per cent of schools in Illinois offering French has increased from 11.2% to 55.4% during the same period while Spanish has increased from 1.9% to 16.2%. Latin seems to be destined to meet the same fate as Greek. There is a tendency at present to change Latin from a four-years' course to a two-years' course. The next step may mean its elimination from the program of studies of the secondary school. This change is probably accounted for chiefly by the ancient and inefficient type of technique of instruction persistently retained by Latin teachers. The technique of instruction common to Latin has a poor appeal in contrast with the new technique which has entered the field of modern languages. Teachers and others who are interested in Latin must be held responsible for retaining it on the program of studies. It is for them to prove the value of Latin as a study for the American high school boy and girl. I feel convinced that pupils who have studied Latin have better discrimination in the choice of English words and yet I have no proof of this conviction. Studies must be made on a scientific basis which will either command or condemn the position of Latin on the high school program of studies. In the meantime Latin teachers must make an effort to break away from puzzle-solving-attitude type of technique of instruction so common to the schools of this state or Latin will disappear before there has been time to make a study which will prove its worth.

The reasons for introducing the study of modern languages have not been studied carefully. The Spanish admirers thought that they had very valid commercial reasons for the teaching of Spanish in the high school, and yet the history of our recent commercial relations with Spanish-speaking countries does not bear out the validity of the commercial appeal. The present tendency is for the large commercial house to employ the native who speaks good Spanish and poor English. Only a short time ago we were studying French with a zeal in order that we could talk with our French cousins.

An age of inventions has made our nation one of an inquisitive and quarrelsome family. If we have dealings with our neighbors we must understand them. We must make every effort toward thorough understandings. The ability to speak and understand a foreign language assists greatly in the interpretation of the actions and motives of the country to which that language belongs. There should be enough persons in America trained in the French language to interpret French actions and French life. There should be many persons able to understand the Spanish language in order that we will have a better understanding of Spanish customs and Spanish life. It is impossible for every school to offer training in many languages, but there are many schools that can give such training.

What is the best foreign language for a small school to offer? There is no best language. The answer to this question depends entirely upon local conditions. Perhaps the greatest factor to be considered is the person who is to teach the language. It is a serious mistake to offer a foreign language which must be taught by a teacher who is poorly prepared. At the present time, with the inadequate supply of good teachers of modern languages and the constant changing of the faculties of small schools, it is very doubtful if it is a safe policy for the three or four-teacher schools to add a modern language to the two to four years of Latin common to such schools. As more teachers complete their training for foreign language teaching this condition will gradually disappear. If a modern language is to be added to the program of instruction competent instruction must be provided and the course must be made long enough to be worth while. A one-year course in a modern language is a mistake. A three or four-year course is strongly recommended.

The training of the teacher of a foreign language must be thorough. Due to the great demand of French teachers during the war, many poorly trained teachers are attempting to teach French, teachers who have had perhaps only one year of college French, and the results attained have been very disappointing. The teacher of this subject should have had at least three or four years of college or university training in the French language and she should have had a great deal of practice in speaking French. Many successful teachers who have not had the opportunity to study abroad owe their success to the fact that they have lived in "La Maison Francaise" common to many universities.

Success in teaching a foreign language depends very greatly on the technique of instruction employed by the teacher. At the present time much attention is being given to the technique which the teacher of a modern language employs, with the result that there is a tendency toward the Direct Method. Unfortunately, very little attention is being given to the technique of Latin teaching. Teachers are still clinging to an old and inadequate type of instruction. Modern language belongs to the Language Arts type of instruction while one phase of the study of modern language, the study of grammar, belongs to the Logic Type of instruction. The two types are entirely distinct. The common error is to confuse them. French lends itself particularly well to Direct Method of instruction. A discussion of this method of teaching French follows as an example of the kind of technique of instruction employed by many of the best French teachers.

To be able to think in French is the goal toward which the student of French must work. The moment rules and principles are taught, the pupil thinks in English. It is therefore necessary that the teacher of French plan to carry on the work of instruction without the use of the English language. To many teachers this appears impossible, and yet there are many of the best French teachers who scarcely speak a word of English to the class. Much preparation on the part of the teacher is required. It may mean that she will be forced to do more teaching and less lesson hearing.

The Initial Step.

During the first two or three days the teacher must make every effort to bring her pupils to an understanding of France and its people. They must see the beauty of this great country and they must feel the intense patriotism, the great national pride and the real spirit of France. During these first days the teacher makes little or no reference to the fact that she is to give a course in French. She is busy telling stories in English of France and her people. The pupils must emerge from this first step eager to learn the language of a people whom they have begun to know.

The First Stage.

On the third or fourth day the teacher is confronted with the problem of teaching a French vocabulary. She is prepared for this. She knows that the easiest place to begin is to teach the names of objects which she will show to the class. The teacher holds up some object, perhaps a book, and says "le livre." She writes the name on the black board. She then holds up another object such a pencil and says "le crayon." She writes this name on the board. She now holds up one of these objects and indicates to some member of the class by gesture and her actions that she wishes the pupil to name the object in French. This may cause some embarrassment and a little confusion, but finally one of the pupils will make a successful attempt. During the first week or two the names of many objects will be learned in this way. Some teachers are making very good use of pictures of objects. The name of an object suggests the next step. Of what use is the object? "Qu'est-ce vous faites avec le crayon. Vous écrivez avec le crayon." During this period the teacher makes much use of gestures. The teacher introduces into this period expressions like "Montrez-moi la table." "Ou est la fenêtre?" These expressions should be spoken and then written on the black board. Probably the next step is the introduction of action. "Je ferme la fenêtre." "Vous fermez la porte." Commands introducing the useful expression "Donnez-moi" may be given at this stage. Leading from this step is the idea of the purpose of the action. "Pourquoi fermez-vous la porte? Parse-ce que il fait froid." The teacher must plan her work in steps which lead logically one from the other. The pupil must get the idea, early in the course, that he is speaking French. Pupils must be encouraged to use freely among themselves the expressions which they have learned. "Comment allez-vous, mademoiselle? Tres bien, merci. Et vous?" From the very first the pupil must get the habit of thinking in French. During the first stage, which lasts for about three months, the pupils do no translating. It is very doubtful if they should be given a French book. All of the work is planned by the teacher and taught to the pupils during the class period. They are given no assignments but they are getting an interest in French which leads them to study outside the class. The self motivated student is the one who learns most.

Early Reading Stage

As soon as the pupil has learned to use about two hundred words and common expressions he is ready to begin to do a lot of easy reading. If pupils are forced to read before they have a working vocabulary there is much danger of getting them into the puzzle-solving attitude of reading. For the work during this stage the teacher should have on hands a large number of easy readers. Illustrated books seem to have an appeal to pupils during this stage just as picture books appeal to the primary pupils who are learning to read English. The method of teaching French to the pupil of the secondary school isn't far different from the method used to teach the primary pupil to read. The pupil reads in French while the teacher notes what he reads and questions him in French. If the pupil fails to grasp the meaning, let him read again silently and then aloud. If the teacher finds the book too difficult she should lay it aside for the time being and use an easier one. During occasional class periods the teacher should read an easy story, asking for reproductions in the words of the pupil, or perhaps asking questions on what she is reading. The teacher must be adept at creating situations that invite natural and easy conversation.

The early reading stage usually ends about nine months from the time the pupil has begun the study of French.

Working on the Higher Level

This stage comprises extensive silent reading, frequent discussions in French, conferences with the teacher, and a great deal of library work. It

means much work in composition which has been gradually developed from the very beginning. Much of the second year's work in French should consist of intensive work on this higher level.

Grammar

During the early stages, the teacher has given little attention to the study of formal grammar. She has taught the verb forms needed and has made the study of pronouns and various other topics as a natural part of the French course. At no time has she asked the pupil to learn all of the many forms employed in the complete conjugation of verbs. She has wisely avoided setting up a great crop of inhibitions in her pupils. When the pupil has learned to think in French he can take a course in French Grammar with safety. French grammar should be given only after the pupil has a fair knowledge of the French language. Many teachers feel that it should be given as a separate course in the third or fourth year. This idea is in decided contrast to that found in many schools where the pupil wrestles with verb conjugations from almost the first day.

French Literature

Literature as a study proper should be given as a separate course. Much attention should be given to the appreciation of the selections read. The pupil should develop a sense of appreciation and a taste for good literature during such a course.

Composition

The pupil should be taught to express himself in written French from the very first. The technique of instruction employed is the same as that employed in the teaching of English composition. Letter writing should be carried on. In many schools the pupils are corresponding with pupils in France who are studying English. A great deal of interest and life is thus added to the work of the class.

Testing the Results of the Instruction

The value of a test lies not in finding out how much the pupil knows in order that he may be given an appropriate "grade," but in the fact that the teacher is thereby enabled to find out how well she has been teaching and upon what things she must concentrate her efforts. The teacher must teach, test, diagnose and teach again. All of the testing of the instruction in French should be in French. Tests should be of frequent occurrence and not of the formal type. It is possible to make up tests on reading and comprehension similar to standard tests which have been developed for testing English. Compositions can be measured in quality by the use of a standard scale just as we are now measuring the quality of English compositions.

The French Classroom

The French room should be in many respects a French library. The teacher acts as a guide to the pupil in his reading, selecting the books and magazines and placing them before the pupil in such a manner that they have an appeal. The good teacher must be a salesman in many respects, selling the reading to the pupils. The equipment in this class room library should include many easy and attractive story books, books on history, travel, science, biography, and adventure. There should also be included a great deal of current literature, many periodicals and at least one good French newspaper. This French room should be so arranged that a French club can meet in it as a social French organization. In many French class rooms the pupils have made very artistic decorations in the form of posters of unique French design, thus combining French with art.

Drills

Pure practice drills are out of place in the "Direct Method" of instruction. The most economic method of teaching words and forms involves a great deal of reading and frequent oral discussions. Many excellent French teachers make an exception of phonetic drills on the grounds that they are enabled to save much time by their use.

The teacher who is interested in her work will be on the alert for new methods and new devices which will aid her in the presentation of her subject and she will make every effort to prepare herself to meet the demands which are now being made in the field of foreign languages.

In the discussion which followed, the point was made that advocates of the direct method must not fail to give the grammatical knowledge without which no student can hope to speak the language accurately and correctly. It was also pointed out that in Europe, where the direct method has been used so extensively, instruction in a foreign language is begun much earlier than it is with us, and that more mature minds waste time by so-called "conversation" too long continued.

Miss Eunice Prutsman was unable to attend the Conference this year, but her report in regard to the investigation carried out by her committee as to the value of foreign language study to high school graduates who did not go to college was read by Miss Doniat.

Report of the Committee On the Value of Foreign Language Study to High School Graduates Who Did Not Go to College

Miss Eunice Prutsman of Chicago

- I. 79 non-college students answered: 20 men, 48 women and the remainder failed to specify; 7 high schools were represented.
- II. 38 studied German. 2 (3 years); 26 (2 years); 4 (1 year); 1 (3 mos.).
32 studied French. 18 (2 years); 4 (1½ years); 10 (1 year).
9 studied Spanish. 3 (2 year); 5 (1 year); 1 (½ year).
- III. 1. Occupations in order of frequency, although several stated none: stenographers, clerks, housewives, owners of business, teachers, librarians, secretaries, farmer, miner, ex-army man.
2. Nine had read a book in a modern language since leaving high school (all of them in Chicago).
3. Sixteen had read a magazine in a modern language occasionally, 2 regularly.
4. Fifteen speak a modern language occasionally, 3 regularly.
5. Forty feel modern language study has been a satisfaction, although most of them are at a loss to explain just how.
- IV. Where the emphasis should be laid.
50 say conversation,
6 say translation and conversation,
7 say grammar,
5 say history and translation,
5 say grammar and conversation,
1 says history, translation, informational knowledge and grammar.

- V. A few suggestions to make work more profitable were:
1. Stress conversation in foreign language in class.
 2. Use foreign language *only* in clubs.
 3. Use English to explain grammar.
 4. Give plays in foreign language.
 5. Begin language study in the grades and use dialect method.
- VI. Advice to high school students as to whether they should study modern languages.
- 1 says do not take any—none is practical
 - 3 suggest German if the students wants to be a scientist.
 - 3 think it makes no difference which modern language is studied, but at least 1 should be studied.
 - 4 suggest Spanish because of its "practical and commercial value" and as a "business aid."
 - 15 suggest French because "it is popular," "widely used in current literature," "commercial value," "because it broadens vision," "because, next to English, it has the best literature," "because enough of it is taught in high school to give a foundation to continue if needed."
 - 31 suggest French or Spanish.

Several teachers made suggestions for similar work to be carried on next year as follows:

1. Send out the same questionnaires again to the same kind of former high school pupils, that is, to those who have not attended college, but make the investigation more widespread.
2. Send a similar questionnaire to college students only.
3. Investigate *all* the students who were in high school some certain year. By *all*, these teachers mean regardless of whether the pupil finished high school or not and regardless, also, of whether he went to college or not.

Professor Goebel of the University followed with a paper on "The Teaching of German on a Comparative Basis with English."

Before the last paper was read the business of electing a third member of the committee was taken up. Professor Fitz-Gerald was nominated and it was unanimously voted that the Secretary be instructed to cast a ballot for Professor Fitz-Gerald. Professor Oliver spoke briefly in regard to the work of the International Correspondence Bureau, and especially urged the need of enrolling more boys. The service of the Bureau is now being extended to Spanish-speaking countries, and as soon as conditions warrant it, other countries will be included.

Miss Lois Scott then read a paper on "The Value of the French Club.

Value of the French Club

Lois M. Scott, Mattoon

The expediency of maintaining a high school French Club is, I am inclined to believe, partially a local problem and varies according to several factors. I have not settled in my own mind whether I think we should or should not attempt to continue this project in the town where I am teaching. So I do not come to you today armed with a list of arguments wholly in favor of the French Club in the high school, but rather to submit to you some of my opinions both

favorable and reactionary, gained from experience as a member of a French Club, as a teacher, and therefore the leader of our French Club, and from interviews with others.

First, let us consider some of the more serious problems that one encounters in trying to establish and carry on any foreign language club in a two-year course. It is an extra school activity which cannot wisely be made compulsory. I say cannot wisely be made compulsory for two reasons. First, from the administrative side, the pupils should not be coerced into something for which no credit is given. But what is more serious to the health of the club, coercion kills interest and spontaneity. While on the other hand, if attendance is not required, one may find himself with a small group of conscientious pupils who alone have responded. Unless some tactful maneuver has been contrived on the part of those in charge, this "come-if-you-wish" invitation will result in the attendance of most of the girls and not more than a handful of the boys.

Again and secondly, a successful club is conducted by *pupils* with the teacher's approval and occasional suggestion. But usually it is a difficult matter to persuade the beginners that they know enough about French to arrange an interesting program and that they can get along without the teacher's constant help.

If the places on the program are taken by the more advanced and precocious pupils, to whose lot the honors naturally fall most often, the beginners and slower pupils lose interest if they cannot understand what is said and consequently are not eager to come the next time. In a two-year course, it is not practicable to maintain a separate club for the beginners. But when conversational games are played, the first-year pupils are often too timid to compete with those farther advanced.

Perhaps, however, the advantages of a French Club outnumber the disadvantages. If some of the problems mentioned can be solved, much is gained in stimulation and interest. Last year, the first meeting of our club was held about three months after the beginning of the school year. It has been my experience that meetings once a month are frequent enough, for it takes some time to prepare a program and there are so many other legitimate attractions beside French Clubs that one risks over-working a good idea if the meetings are held more frequently.

At two or three meetings, short plays were given. These, of course, were very simple. The feature of our first program was a one-act play, entitled "La Leçon de Français," which includes nine characters and represents a French school-room scene on the day of a visit from "un inspecteur." The only two speeches of more than 3 or 4 lines are made by "l'inspecteur" and "l'institutrice." These parts were taken by second-year pupils. Most of the other parts were taken by beginners. We are always lax in our observance of stage formalities. Our only efforts toward special costuming are in such details as hair-dress, an occasional bright sash, apron or flower. The assignments of parts in each case are made by a pupil-committee and there is some competition for places. The audience is able to follow the lines because I read the play to all the classes a day or two before the club meeting.

Sometimes we have monologues or dialogues with appropriate gestures and French manners. Twice last year the pupils invited townspeople to address the club,—the first, a woman who had lived in Paris and who flattered the pupils by speaking French that they could understand. The other speaker who came to us was a lawyer who spent several months in France during the war. At our Christmas program, one pupil told in English of the observance of Christmas in France. At least two numbers of each program are of a general nature to include everyone present. These general numbers are games and songs. The week before a meeting, I give each of the classes words of one or

two new songs which are sometimes memorized as a classroom exercise or simply copied and taken to the club meeting. Among the most popular of these little songs have been: "Frère Jacques"—"Malbrough S'en Vant-en Guerre"—"Au Clair de la Lune" et "Ma Normandie." We play such games as the "counting game," in which we go around the group counting and each fifth pupil stamps his foot instead of counting. If he fails he must go to the middle of the room and pay any forfeit that may be demanded, the request being made in French. There are other time-honored games such as the one in which the first pupil gives the name of an animal, or an article of clothing, a flower, etc., and the next pupil must continue by naming another article of the same character beginning with the last letter of the one previously named. Frequently, one pupil is asked to collect riddles, "divinettes," and these are read and efforts made to guess them. Other times, someone reads short stories "pour rire," ("mais nous ne rions pas toujours, parce que nous ne comprenons pas toujours"). The last number of every program is the singing of "La Marseillaise" (comme à l'université).

After the first meeting or two, the arrangement of the program should be in the hands of a pupil-committee who brings its outline to the teacher for suggestion and approval. At this time, the teacher has the necessary opportunity to add or subtract, but she should be tactful enough to allow the pupils to feel that they have done the real work, and in most cases they have. A number of reference books and magazines are available and from these, ideas and selections can be obtained. Among the most helpful sources of material for our use, we have found "Fifteen French Plays" by François, "Le Petit Journal, Revue de la Presse Française," edited by Doubleday, Page and Company for American students of French, and "Le Monde Français," a very successful French magazine whose originator was the late Arthur Merrill of Chicago. There are numerous books containing suitable short stories and riddles, but as yet, I have not found a book of French games. If such a book could be secured, I believe that French Clubs would receive a stimulus.

So, in conclusion, I should say that the value of high school French Clubs is variable, according to the above named conditions and circumstances. But the project is undoubtedly worth a trial.

In the discussion which followed, helpful suggestions were made in regard to obtaining material for games, songs, plays and similar material for arousing interest in the French Club.

The meeting then adjourned to meet at 2 o'clock in Room 202 of Lincoln Hall.

The major portion of the afternoon session was devoted to the reading and discussion of the syllabus for third year and fourth year high school French, presented by Miss Doniat, and of a similar syllabus for Spanish, presented by Professor Fitz-Gerald. Inquiry showed that very few of the teachers present were teaching third year work, and almost none fourth year work. So, at the request of the section, Professor Fitz-Gerald also read the syllabus for first year and second year Spanish, which had not been presented to this Conference before.* It was voted to ask the committee to prepare a list of books suitable for reading in the various years. It was believed that such a graded list could be prepared without specifying editions or publishing companies, and that such a list would be of a great deal of help, especially to less experienced teachers.

*This Syllabus is published in full in the Modern Language Journal for November, 1920.

Professor Paul Van Brunt Jones closed the program for the afternoon with a brief discussion of the importance of modern languages to the student of history. He pointed out that although the group of students coming from high school to college is relatively small, the need for a thorough grounding in modern languages is tremendous. German should be reinstated in the high schools, because modern scholars are greatly indebted to German scholarship. The field should also be expanded to take in Italian and Spanish, since much important work is being done by Italian and Spanish scholars to-day.

Foreign Languages and the Historian

P. V. B. Jones, University

One interested in historical study can only plead for a curriculum in the high school which shall make generous allowance for the study of foreign languages. It is trite, indeed, to remark that students who desire to specialize in history in college must know French and German, the two languages in which for generations past master work in historical writing has been done. However, it is right in this connection that a problem of immediate importance confronts all teachers of modern languages in the high schools—that of securing the rehabilitation of German as speedily as possible. One can appreciate the need for controlling such study during the war, but certainly the blind frenzy of those mis-guided patriots who worked so successfully to annihilate the study must be deplored. Certainly that eye is badly inflamed which sees vicious propaganda in Storm's *Immensee*! German is a difficult language to acquire; it is as essential as ever to any sincere student of history; its present status in the high schools must be changed and the sooner the better.

In addition to French and German, however, more and more it is becoming necessary for the specialist in history to know Italian and Spanish. Much good work is being done by historians in Spain and Italy, which work should of course be followed by students elsewhere. Furthermore, documents in various archives in these two countries are constantly being made available for the historical student, which he must be equipped to handle.

Objection may be taken to this plea on the grounds that the high schools have other work to do than to cater to the perhaps unforeseen needs of a very small group of their students. If this be the case it should be observed that the number of such students is bound to increase due to the development of historical study in America, to the growing consciousness of the fact that the world is amazingly smaller than it was two decades ago, and that it shrinks yearly, and to the fact that America, despite the views of quite a body of her people to the contrary, is decidedly a part of the world, her fate being linked with the destinies of people everywhere.

Indeed in view of these latter considerations the historical student is further bound to urge a more vigorous study of foreign languages in the high school. Historians are deeply interested in the development of sound citizenship, a development of the utmost importance to America to-day. The best citizenship is certainly contingent upon a sane understanding of peoples the world over, their problems, ideals and achievements. Is it too utterly chimerical to hope that with the advancement of educational processes in America, the high schools through their better language curricula shall more adequately prepare the foundations of good citizenship in all of their students? Think for a moment of the recent economic developments in the economic life of Italy, from which pioneering the entire world must ultimately profit—is it too utterly

absurd to hope that some day through good linguistic training, even the average citizen in America shall be able to follow a story as important as this at first hand on his own initiative?

Finally in this matter of foreign language in the high school the historical student is moved to urge that such training in modern language as is offered really prepare the student to read such language successfully. To-day the average student with two years' high school French or German would stand aghast if asked by a history teacher to read an assignment in either one of those tongues. Aghast because he couldn't do it. This should not be so.

The high school cannot afford to send out poorly prepared citizens, and we may look forward to the time when the schools in citizenship building will take up the study of foreign languages as is done in Europe, where it is considered part of every student's work. There is a great necessity for a more intimate knowledge of conditions and changes over the world at large. It is true that we can obtain the gist of this knowledge in translation, but if more students could use the foreign languages in obtaining this knowledge it would promote a better understanding of foreign affairs and a more cosmopolitan feeling.

The section expressed its gratitude to those who had taken part in the day's program, and the meeting adjourned.

JENNIE A. WHITTEN, *Secretary*.

13. MUSIC SECTION

The Music Section was called to order at 9 A. M. by the Chairman, J. Lawrence Erb, of the University. After the Address of Welcome and the Announcements, the Chairman read a paper which he had prepared, at the request of a number of interested persons, but which had not been programmed. The paper follows:

The High School Auditorium in a New Light

By J. Lawrence Erb of the University

The business of music teaching takes on many phases. We are all acquainted with its more customary manifestations,—so-called "private" instruction in individual performance, class-work in theory and sight-reading, history and appreciation (or the better word, "esthetics"), the drill of the chorus and orchestra, or the more or less illuminating lecture or lecture-recital. These make up an inspiring list of activities, and indeed they exhaust the subject, so far as the common view point is concerned. Even to the music-teacher there seems at first blush little else to include in that term which, like charity, covers a multitude of sins,—musical education. At any rate, the duty of the music-teacher would seem to be pretty well done if he has done full justice to the various activities mentioned.

But, without stopping to comment further than to say that no one teacher should hope or expect,—or be permitted,—to teach more than a small proportion of the matters enumerated, it is nevertheless true that, unless musical education includes many opportunities to *hear* good music, it misses the vitalizing factor without which it is of little consequence.

We would smile to think of studying a foreign language without ever hearing it spoken by a person with at least a reasonable understanding of its pronunciation and idioms. True, the literature of the language might unfold to a certain extent its treasures even under such conditions, but at best the acquaintance would lack the real true function of a language, to express thoughts and to act as a medium of communication between man and man.

Even in the English language, to which we are born, it is yet true that, without the stimulus of communication with minds that have achieved and of a diction of more or less distinction,—too often, alas, less rather than more,—the vocabulary soon shrinks and the style degenerates into a mere travesty of its true beauty and efficiency. In other words, without the living model, language soon ceases to grow and begins to fossilize and becomes no longer capable of expressing really the thoughts and feelings of the mind and soul.

The most serious handicap to the cause of good music in the great majority of American communities is the lack of facilities for hearing good music artistically performed. Even many cities which have achieved a population numbering well into the tens of thousands starve musically or develop almost fatal cases of musical indigestion or malnutrition for lack of decent musical pabulum. As for the small town or village, its musical condition is pathetic. I venture the assertion that in thousands of villages and towns, or even cities, the months roll on into years without the appearance of any musical attraction more dignified than a Chautauqua or Lyceum company, which, while it fills an important place, can scarcely be regarded seriously in this connection.

But, not to prolong the agony of a recital of the needs of our communities, let us think rather of the best way to supply the needs. First, however, one further statement of a negative character. The best way is *not* to take a plunge on some high-priced, highly-advertised artist whose fee for a single performance runs into four figures. The chances are one hundred to one that such an artist will be far over the heads of the audience, and will defeat, rather than promote, the cause of good music for the masses. Hearing a great artist once in a lifetime may be satisfactory as a *thrill*, but educationally it is of little value unless the one superlative hearing has been prepared by myriads of hearings of a humbler sort. What the great majority of American communities need is not "one grand splurge," straining the finances of the promoters,—if it does not leave them deeply in debt—but a frequent opportunity to hear many artists of humbler rank (but no less lofty ideals) who, being nearer the public are more intelligent regarding its needs, and, being less independent financially, are more willing to fashion a program to meet the needs of that public. Most high-grade recitals are built to meet the onslaughts of the critics and the professional and the professional students. The general public is not considered, beyond its dollars, and gets nothing intelligible out of them.

The first need, then, is an annual series of genuine art recitals at moderate prices but by real artists. This demands two important factors that rarely are to be found in a small town, namely, a good, centrally-located, available auditorium and a good piano. The small town may boast of an "opera-house" but just as often the movie-theater is the only place of amusement to be found. And in either case the construction and condition of the building is usually most unsatisfactory and the fee for its use too high to be considered in such a connection. Moreover, the "opera house" or "movie" piano is usually the very last word in the degradation of what was once a musical instrument. Even though the hall might do, the piano obviously couldn't. And without an instrument in the hall it is useless to consider a series of concerts, or, in these days of uncertain railroad service, even one. Besides, the cost of transporting a grand piano is prohibitive from every point of view,—and the public always pays the bill. In fact, where the fee of the artist is not more than \$100, the interest on the investment (perhaps \$2,500 for the piano alone) and the depre-

ciation and the transportation charges would just about eat up the entire amount, leaving nothing to pay the traveling and hotel expenses of the artist, to say nothing of a fee for the recital. In other words, it is impossible to present moderate-priced recitals, no matter how reasonable the demands of the artist may be, so long as the present system prevails, of sending grand pianos for the use of artists. With the tremendous distances in this country and the uncertainty of transportation, it sometimes becomes necessary for a single piano firm to provide literally dozens of grand pianos for the use of artists. Obviously this entails an investment and a transportation bill which add tremendously to the cost of promoting recitals.

It becomes evident, therefore, that we who are interested in musical education should consider seriously the part which the high school can play in relieving the situation and creating the facilities for artistic musical attractions at a moderate cost. Obviously in most communities, especially of the smaller size, the high school affords the one suitable auditorium. Not only is it often the largest, but its arrangement is better adapted for a concert or recital, and there are no prejudices to overcome, as is often the case with churches or other similar buildings. Moreover, the high school is the focal point of the local educational system, and the indications are that the school buildings will become increasingly the centers of community activities of all kinds. What more logical, therefore, than that the high school auditorium add one more to its present functions and become the musical center.

A high school auditorium without a piano is as unthinkable as "Hamlet" without the Dane. Why not, while buying a piano, purchase one of the baby-grand or medium-sized grand variety? It will cost only a little more; being a more attractive instrument, it will command more respectful treatment; and, when some artist comes to town, he can afford to make his best price because he has been spared the worry and expense of providing his own instrument. It is not unusual to find an artist at the recital hall and his piano delayed,—hence no recital or an agonizing performance on some ramshackle instrument, hastily provided from the gymnasium or the movie house. A good piano, which by virtue of the investment creates a more respectful psychological reaction and is therefore more likely to be kept in condition, is a great asset in lubricating the wheels that make a recital series possible.

A final word about the promoting of recitals in such a case. The development of athletics has led to the creation of the machinery to handle this very important activity. Dramatics or the school paper likewise create the machinery for their promotion. Every high school has within it an organization (or several) which could form the nucleus of the recital movement. Being a high school affair, it can justly appeal to the entire community for support and cooperation, for it will return 100 cents on the dollar to the community for all that is invested. Our communities will become musical largely as they have the opportunity to hear *suitable* good music. It is highly proper, therefore, that the high schools, officially with the cooperation of the school authorities, or unofficially, through some society or group of societies, but in any event with the cooperation of every musical and community-uplift agency, provide the place, the equipment and the opportunity for this most important educational project.

In the discussion following the paper, it was found that Bloomington, Peoria, Rockford and Henry already have inaugurated entertainment courses more or less in line with the plan proposed.

The Reports of Standing Committees were then submitted, as follows:

Report of the Committee on the History of Music

L. L. Carl, Belleville, Chairman

While preparing a report of the activities of the Committee on the History of Music, it occurred to me that the Committee did not really live up to the purpose of its existence. There are reasons for that. In the first place, the members of the Committee are too far apart to be able to get together for working out fundamental plans and discussing matters for a successful result, and then there are no funds on hand to cover expenses for a thorough investigation of the conditions now prevailing in the teaching of the history of music. It should be our aim to find out in what way the history of music is taught in the different high schools of the State, make out statistics and try to find the best points in every system that is now being used for the teaching of this subject. Those points could be then employed in a uniform plan for all the high schools. In every past report we have outlined a possible treatment of the history of music. But how do we know that these suggestions have been taken up by the schools of our State, how do we know whether the supervisors and principals have even taken the trouble of reading these reports? I am afraid that with the delivery of the report at the conference, the good work stopped. Of course, it was later printed in the bulletin of the University; one was proud to find one's name mentioned in that bulletin, and that concluded that year's efforts. But I do not think that this is the real object of the life of the Committee. If the suggestions and syllabi which have been worked out for the teaching of the history of music are acceptable, we should also see to it that they are carried out in practice or the purpose of appointing a committee, and the work done by the same, is useless.

Still conferences of educators and the suggestions given at these occasions are very important, because, if there should be success, we must analyze conditions and lay plans for the completion of the structure. After an agreement has been reached upon a certain course, that course ought to be followed uniformly by every school, in order to reach the objectives in education. Education without a definite plan and goal is a waste of energy.

Three objectives in life stand out clearly; the economic, political and social. For the correct accomplishment of those a high school education should be helpful. If the teaching of music is a part of the means of succeeding to reach them in the most ideal and perfect way, it is the duty of each committee now in existence, to prove whether and how much their branch of music aids in perfecting that end. Supposing, then, that music is entitled to be a subject in the curriculum of the high school by being helpful in securing wealth, association and beauty, the cornerstones of the above mentioned life objectives, how much does the teaching of the history of music contribute? I consider the history of music *the* guide in the understanding of music. If anyone wants to enjoy the gifts of music without the knowledge of its development, he appears like a person who enters an unknown region without an experienced guide. That person will lose himself and may finally perish. After an analysis of our subject, we will find out whether we have a right to teach the history of music in the high school, or not.

If music has an economic value, which hardly can be denied, we must prove the help that is given by the teaching of the history of music for the realization of this first objective. By demonstrating the development of music and its relationship to other branches of art and world-history, we should succeed in increasing the interest of the young people in this subject. We should be able to create a better understanding of that art and a desire to become a master in the profession, points which lead to appreciation, knowledge, habits and skill. In former reports it has been outlined how this could be accomplished. From an economic standpoint music provides the means of putting men and women in a position to earn a livelihood by the practice of the pro-

fession. Economic statistics show that music adds directly and indirectly a tremendous amount to the common wealth of the country. For that reason we should encourage the young people to take up the training for the musical vocation by giving them a chance to receive some of the preparation in the high schools.

Many happy homes are created by performing musical works, not only through earning the means of founding and keeping up the home, but also through the pleasant associations in the home, neighborhood and community, which are called forth through the reproduction of musical creations. That leads us to the second pillar of life, association. Here, too, we need appreciation, knowledge, habits and skill. In this case again they only can be obtained by a thorough and systematic education. Here, also, the high school is the natural place for the accomplishment. A perfect understanding of music, given through the history of music, leads to appreciation, and if we appreciate we acquire the knowledge. Knowledge lets everything become a habit, because it seems so familiar; and, by constant practice, because we like it, since it is a habit, we will finally exhibit skill, the highest accomplishment. All this aids in the creation of associations, so needful in carrying on a happy life. At the time of learning, it was the history of music which again acted as guide to this end.

The third stone to be put in place is beauty. Under beauty we might not understand just beauty as appreciated by the eye, but also the moral beauty, a higher and cleaner standard of living, the _____ of the Greek philosopher. There is no doubt of the fact that music makes our souls more receptive for higher thoughts, that it opens our hearts for everything that is good and beautiful. The ministers of the church use music as a means of preparing the human mind for the service and devotion to God. It certainly teaches us to appreciate the beautiful, to enlarge the knowledge of beauty; it gives us the habit of surrounding ourselves with good and beautiful things, and it makes us skillful in the practice of good thoughts and beautiful deeds. For the creation of that pillar, we also need a great deal of preparation. The high school must be ready to attend to it. The history of music again is able to show the way. It can explain in the development of church music and by performing some of the wonderful old creations of Palestina, Bach and Handel it will help to awaken the necessary interest and prepare the youthful mind for the appreciation of beauty.

An endless amount could be added to this concise explanation. Still I hope that I have made it clear that the history of music is entitled to be a part of music taught within the curriculum of the high school for the accomplishment of the three great objectives of life, to make happy and efficient workers, citizens and members of society.

The report of the Committee on Graded Materials for High School Chorus and Orchestra, Miss L. Louise Bear of Decatur, Chairman, was submitted by Miss Maude Bruce Wallace of Taylorville, as follows:

High School Musical Contests

Miss Maude Bruce Wallace, Taylorville

To excel is a worthy aspiration and if directed along the right lines proves to be an incentive productive of good in educational work. That school people recognize this aspiration is proven by the number of contests in athletics, debate and oratory. For a number of years contests have also been held in instrumental and vocal music, either among the members of a local society or class, or between different schools. These contests, however, have largely been solo presentations.

But since in our schools our music work consists almost entirely of mass-singing or -playing, it would seem as if a fairer test would be contests between groups of singers or players, rather than between soloists. In this way the efforts of the public school music teacher would be recognized rather than those of the private instructor, as is at present often the case; also attention will be focused upon the composition rather than upon the performer.

We need a great deal of choral-singing, and I see in contests of groups of singers an incentive for earnest, thorough and intensive study that can never be obtained with solo contests. Also, in group-singing the *average* singer has a chance to participate with no serious adverse effect upon the entire group, whereas in solo-contests the one *above* the average always is and of necessity must be chosen, thereby often eliminating the very ones who would receive the greatest good.

We are not training soloists, but the masses, and I can see no very lasting benefit either upon the individual or the school which he represents by a contest of soloists, but a very great good upon performers and school alike where the contestant is the group. Not only this, but the group most truly represents our every-day routine. This brings me to say that only those public performances are legitimate which show the results of the actual daily work. They should not be affairs put on for mere show, glory of entertainment. We are too busy doing the things which must be done to have much time for frills, as such.

I am sure it was some such thought that prompted the authorities at the Eastern Illinois Normal School at Charleston last November to issue an invitation to the high schools of Eastern Illinois to participate in a contest to take place in May. Seven schools responded: Decatur, Sullivan, Taylorville, Charleston, Effingham, Morrisonville and Casey.

The committee in charge gave a choice of contesting bodies, either boys' or girls' choruses or mixed. They also gave a list of choruses, for performance, each school choosing the one it preferred. Three schools entered girls' choruses, three mixed, and one a boys' chorus. Decatur won, with Sullivan second.

It was an event very much worth while, and the president of the school said that, if either the athletic contests or the music contests had to be abandoned, he would prefer to give up the athletic contest.

Some such contest could be had in other sections of the state, with the Normal school as the focal point, or between schools of the same county; and I leave the topic for your serious consideration.

(Editor's Note: The County Musical Contest has already become an established feature in certain mid-state counties and is rapidly competing with the athletic contest in interest and support.)

Miss Mabelle Glenn, Chairman of the Committee on Musical Appreciation, introduced Mrs. Homer E. Cotton of Kenilworth, who presented the report as here given:

Teaching of Musical Appreciation in the High School **Mrs. Homer E. Cotton, New Trier Township High School**

Musical appreciation is a subject which cannot be taught as many other subjects in our school curriculum are taught. To go into a class-room and expect in a few lessons to teach a boy or girl to have any real appreciation of an oriental rug or a beautiful piece of pottery would be impossible. Real love and understanding of music must also be the product of a steady growth, and just how to bring about this gradual development is the problem in hand.

There seem to be two types of students to consider in planning courses in musical appreciation. There is the particularly musical student, and there is the boy or girl who seems to have no special interest in music, probably because his musical perception has never been awakened. It is of the former group that I want to speak first.

As a rule our talented and interested students are studying voice or piano or instrumental music, and have an ambition to reach an intellectual understanding of the art. These people are a real joy to deal with. It is my belief that any student wishing credit for any outside music study should be serious enough to take the courses offered in musical history and harmony. In our high school, we require that these subjects shall be carried for two years. By having three recitations of harmony and two of history during the first year and two of harmony and three of history during the next year, the students get the equivalent of one year of each of these subjects. Personally I prefer this, as the two subjects are so closely correlated that a student of history gets more from his course if he knows something of scale construction, intervals, etc., that we are constantly referring to in the study of the evolution of melody and harmony.

In teaching musical history to these classes, I divide the recitation time something like this: The first ten minutes are spent in a snappy discussion of current events to familiarize the students with the names of the old and new artists, new operas and other compositions, and to awaken a general interest in the musical happenings in America and thruout the world. The class take notes on this part of the recitation and one of their test questions might be: "Name two men that are well-known composers and pianists and who have been guest conductors of the Chicago Symphony." The bulk of the recitation time is then spent in study of musical biography. We have followed Hamilton (*Outlines of Musical History*) as our text, but the class has done much outside reading. We have found the musical biographies by Daniel Gregory Mason most helpful. After reading Hamilton, I find my students quoting his phrases concerning "pecuniary wants," "conventional forms," "polyphonic writing," etc., with no clear notion of the author's meaning. I think that we should be sure that every sentence of our text carries a clear conception with it. To insist on pupils memorizing a set of dates means nothing to them and will not help them to a clearer understanding of the composer's music. It is only as the man's or woman's life is found reflected in his genius that we are interested. Many times little details add much spice and interest and help fix a composer's biography in the minds of the pupils. In such cases we are justified in what might otherwise seem unnecessary detail. When this study has been completed I ask each pupil to write a short theme expressing himself in the best possible English, to see if he has some correct and definite notions concerning the composer's life and compositions. When this has been done and we have discussed and reviewed the main points of excellence in the composer's style of writing, we devote several recitation periods to listening to his compositions. So many of the symphonies can now be had for the talking-machine and there are so many string quartettes, excerpts from opera, and solos of every sort at hand, hence there is no end of material for illustration.

Miss Glenn pointed out to us in her splendid paper, read at our meeting last year, that there can be an *over* use of the talking-machine. I am sure that we have all found that a piano performance of a piano sonata or a violin performance of some violin number will arouse keener interest in our listeners. However, when we are not fortunate enough to have the performer himself at hand to play for us, we have an almost human substitute in our friend, the talking-machine.

So much for the teaching of the particularly interested student. Now, what about the mass of pupils that have never had their musical perception awakened?

Our chorus at New Trier is on an elective basis, and we have two hundred in one section and about one hundred in another. Many of these children elect chorus because they love to sing, but there are a few especially among the boys, who prefer being down in the music-room rather than up in the study hall. These rascals many times become really in love with chorus before they know it, but to keep them interested is difficult, as any fellow-supervisor will admit. Feeling that all that these people needed was some definite lessons in listening to music, I set out this year to devote one period a week to teaching them to learn to recognize some of the standard musical compositions. I chose compositions which had definite rhythmic appeal or great melodic grace or a combination of the two things. Operatic numbers hold their attention, if the story is told to them. We never grow too old to love a good story, and if a teacher has any gift in this direction she can command great interest and will be able to pass quickly over the unpleasant aspects of the opera stories. Up to date, we have planned to combine this listening lesson with a memory contest, and I am surprised to find that some of the pupils whom I had fairly despaired of are the very ones that are evincing the greatest interest in trying to remember and recognize the different selections.

Surly, in listening to music our pleasure is two-fold. Anticipation and recognition are both elements which enter so largely into our enjoyment of a musical composition.

Once a month these groups go over to our Assembly Hall, where we have what I call an artist recital, lasting for fifty minutes. These recitals are given by my assistants in the music department, by the best talent that the school affords or by neighboring musicians and friends who are good enough to come out and play or sing for the students.

If one require that the listeners come to perfect bodily rest for all these "listening lessons," so that the pupils are sitting *quietly* and their attitude is that of interested musicians, it seems as tho some understanding and real enjoyment must come.

I took heart a short time ago when I heard one of my boys say, "Think of going to mechanical drawing after this."

My hope is, that in the future I can have my choruses graded as to their year in high school and in this way build up a systematic course in appreciation. When our graded schools and high schools and universities can all work together for one big constructive movement in this direction, then our fondest hopes will be realized and the day will be past when a man or woman can deem himself cultured or educated and with any sort of complacency say that he does not recognize or have any appreciation for a standard musical composition.

The report of the Committee on Prerequisites for Accrediting Applied Music, Miss Mary D. Phillips, of the University, Chairman, was postponed until the afternoon session in connection with the Round Table, "University Credit for Applied Music in the High School."

The morning session was brought to a close with an address, one of those growing out of the recommendation of the Committee of Principals, that a similar paper be presented, with special reference to the specific needs of the Section, before each Section of the Conference. The address follows:

Objectives as the Basis of Curriculum Reconstruction

M. G. Park, Galesburg

I have been asked to address the music section of the High School Conference in the interests of curriculum reconstruction on the basis of life interests. I speak to you as an administrator of secondary education and not as a teacher who has specialized in music. It is my purpose, first, to help to establish a closer relation between principals and teachers in the work of curriculum reconstruction; and second, to define the larger objectives of curriculum reconstruction, namely, "Life Interest Objectives," especially as they might affect the determination of objectives in our high school music choruses.

It has been and is being said that the principal objectives in life are health, wealth, happiness, and sociability. If such be true, what a great and glorious task is set before the schools of to-day in their work of preparing young people for life. One would indeed be fortunate if he obtained a goodly measure of each.

In our school work we are working toward this goal for every pupil. With this in mind we are enlarging, broadening, and perfecting one course after another in our program of studies, each year trying more adequately to reach the principal objectives set before us.

For years we have realized the importance of safeguarding the health of school children. Now we have gone beyond that and have taken upon ourselves the more constructive task of helping to form good health habits and to help build strong bodies. We realize that we must provide adequate health instruction, both in work and play, and inculcate the best health habits if we would make the best citizens of our pupils. Not only must we provide for this at school but we must plan our work along this line so that it carries over into the home and business, and thus helps protect the community life. Not alone do we guard the pupil himself, but we arrange each building to conform to our most advanced ideas of sanitation and hygiene. With courses in hygiene and with our daily gymnastic training this first objective is beginning at least to loom in sight.

The second objective, even though not of the importance of the first, is nevertheless one worthy of some concern in the reconstruction of our curricula. For the prosperity and advancement of our country we must send out from our schools a large percentage of self-supporting, well-trained and successful business men and women. Not in wealth in its common meaning are we interested for our schools, but in wealth as affecting the well-being of the average individual. Our curricula have undergone many changes in recent years to accommodate courses in salesmanship, printing, manual training, stenographic courses and many vocational subjects known to all of us and varying with the needs of our communities and children of varying capacities.

"Education in a democracy, both within and without the school, should develop in each individual the knowledge, interests, ideals, habits, and powers whereby he will find his place and use that place to shape both himself and society toward ever nobler ends." (U. S. Bulletin No. 35, 1918.)

Of times we forget that our high school work is not an end in itself but is only one great factor in preparing members of homes, workers for business and profession, and citizens of a democracy.

When forming our curricula, do we use as our goal these objectives? Do we form our curricula to meet present day needs in a country where our schools draw from all classes; where our social and political life undergoes great periodical changes; and where moral integrity needs different directing and more constant safeguarding? Even for happiness and sociability one needs preparation. If our high school can so direct and stimulate the interests of

their pupils so that they can learn to choose the worth-while and lasting pleasures and social activities, then we should be meeting the most insistent needs of our people.

Should we not have in mind training for an avocation as well as for a vocation for each student? With broad courses in literature, dramatics, music, and art, this need could surely be met. The pupil, both for his own good and for that of the majority must be socialized. The high school has an opportunity here that possibly has never been made use of to the fullest extent. This may be because we have let subjects and plans which we have considered more important to usurp the place of these things. However, we are making it possible for boys and girls from all classes and from the different races making up our cities, to meet upon equal standing socially in our mixers, our clubs, assemblies, sports, contests, glee clubs, bands, etc. In a small way we have tried for years to train for citizenship and home responsibility in our civic clubs and our domestic science courses, etc. But after all quite inadequately. Yet this is one of our greatest objectives. Many of our pupils are not going beyond high school for any school training whatsoever. It is for these pupils especially that we need the most comprehensive courses along vocational lines. These boys and girls must be sent out with the best understanding of their duties as members of our commonwealth and citizens of our communities that it is possible to give them. They must go out able to take their places creditably in their homes, and be prepared to direct their homes with at least an appreciation of health habits, civic responsibilities, domestic employment and leisure. In preparing pupils for happiness and contentment in their leisure time we are treading in a path used very little so far in our schools. In our busy American life we forget that an avocation might mean as much to a boy or a girl as a vocation. The good derived ethically from the courses adapted to this work is invaluable.

Beside the four comprehensive objectives named we might state them as put very concisely by the N. E. A. Commission on the reorganization of Secondary Education. Not only do these apply to the pupil of high school age, with whom we are dealing, but to the pupil through all his years of educational training.

The objectives are stated as health, command of fundamental processes, worthy home-membership, worthy use of leisure and ethical character. These are worthy of our interest and thought in judging what phases of our subject should be especially stressed for the good of all. In choosing our courses let them be measured by the objectives of our educational needs. Do they meet these objectives? Then let us keep them in our curricula; if not included in our curricula, let us add them. Then let us broaden and perfect our courses in these subjects until they meet the needs of the majority.

In this day of specialization we are trained as teachers along one or two lines particularly, to such an extent that I fear we often give our pupils too much of the technique of the subject instead of a broad knowledge that will mean more to him as he goes out into life. In reconstructing our curriculum in music we face a task that has as yet received probably less attention than most of the subjects on our program of studies. Not because it is of less importance, nor that it has no utilitarian value, but because it is an art and as such has been treated as a thing apart. Music has always had some part in our schools, however. Even the proverbial red school-house saw the advantage of music as a part of the school work to the extent that each morning found the pupils and teachers busily engaged in singing a few religious, patriotic, and folk songs.

Of course we have advanced greatly since that time but not as much as with most other subjects. But just what are the main objectives toward which we are working in our schools, and are they worth while? In the lower grades

where is laid the basis for the pupils' greater knowledge of music, the little child would answer for you by saying he wants to learn to sing songs. That is the goal for him. Then up through the grades and in high school our aim should not be to accommodate the few specially gifted, musically, but to arrange for the broad musical understanding for our people.

The pupil need not go into the intricacies of advanced harmony and counterpoint. Nor does he necessarily need to be able to sing the most classical aria. Instead, we must give him the understanding and appreciation of a part of the great mass of beauty that is stored away in our masterpieces of music of all ages. As he should learn the history and development of his own language, so he should know something of the development of the "language of the emotions," for it is indeed a universal language. So out of the history of music we should hope to give our pupils a few significant facts. Through theory and harmony he should be led very gradually to know the principles necessary for a broad education.

First let us consider a few of the objectives in our teaching of music from the early grades through high school, then let us see if they can be measured by the objectives for life.

In the grades the little child, we feel, must learn a number of simple songs. In doing this he must have his voice made as pleasing as possible by the exercises and practices given by his teacher. If he is a monotone he receives special attention and here is eradicated in most cases a defect that might not later be overcome. As he advances he gains a knowledge of note reading and of note values. He gets acquainted with a subject so novel, so all-embracing, that even the small child feels the novelty and beauty of such a study. To find that the ordinary school subjects, reading, history and arithmetic, are related to a subject full of beauty and melody—how fascinating! How interesting and everlasting an impression is made by singing the very stories he has read! Then what a relief to find a reason for the desire for motion and expression when certain kinds of music are heard.

As we go on we feel that in order to reach our aims in music we must see that either before high school years or during these years each pupil must be the possessor of at least a small store of musical knowledge. For example of a few things he needs he must know scale building, key signature, the most used terms and signs, and must be able to read readily. Then we can bring him into the real pleasures of playing in our orchestras or bands or of singing in our choruses and glee clubs. Not only have we made it possible for him to use his knowledge in our school glee clubs and bands, but he can take his part creditably in the assemblies at the parties he attends, in the church services, or in any musical organization in the community. When he leaves us, should he not know the great operas? After all, to know their stories is to know a part of the literature of different countries. Would we consider our educational system complete if we neglected to give a proper place to the great literary masterpieces? Then we must give the song stories their place.

As the pupil gains knowledge of history he learns of the life of the Indian, the negro, and peoples of all countries. But what a vast knowledge he would acquire if he saw them through the eyes of a composer who has lived among and studied them and knows them only as a people can be known, through their own songs, their folk-songs, given from one generation to another. When our high school pupils study biography they are being cheated if they do not learn to know a goodly number of musicians. There is much of interest and much valuable knowledge along many lines that a pupil will get from the life histories of some of our musicians just as he gets much along certain lines from the lives of some of our warriors, our literary men and our artists.

The subject of music has too many possibilities to hope to deal with it exhaustively, but with my few suggestions and your study of music, let us test a few of the broader objectives.

We are working toward sociability and ultimate happiness for our pupils. Then let us give them an avocation,—music. Possibly it will be the ability to sing good songs with an understanding of musical beauty; it may be that he will have acquired a desire for work in choruses in his leisure moments; with others the pleasure of ensemble playing will remain. But most of all he may have acquired the desire for good music, the joy of an evening of music, and the understanding of good music when he hears it.

He has gained, through his musical training, another medium by which he can approach others in his social life. He has learned to appreciate a new language and thus can mingle with those of like appreciation.

Undoubtedly this subject bears testing by our greatest objectives. So now our need is to make our curriculum accommodate the music courses in the best way for the good of the many. Surely we need broad, comprehensive courses that are not alone of interest to one of unusual talent,—that can come elsewhere,—but courses giving the store of knowledge that will make pupils good readers; give a broad knowledge of underlying principles; knowledge of the interesting people making up the musical world and an understanding of our best musical classics. If we can do this we shall be helping in a great measure to socialize our boys and girls, and we shall send them out of our high schools better prepared to meet life and gain real enjoyment.

"The retention of any subject in, or its elimination from the high school curriculum as well as the addition or modification of any subject should be determined absolutely by what may be spoken of as "Life Interest Objectives." Any teacher or principal or school system must justify the subjects taught as well as the failure to teach other subjects, on the basis of these "Life Interest Objectives." There must be a concerted effort on the part of high school supervisors, and teachers alike, to make the high school curricula actual functioning factors in the exceedingly intense and complex social organization to which the young men and women are being launched thru and from the activities of the modern high school."

AFTERNOON SESSION

The afternoon session was called to order at 2 o'clock, and proceeded at once to the transaction of necessary business. The first item was the re-election for a three-year term of Miss L. Louise Bear, Decatur, and Mrs. Homer E. Cotton, Kenilworth, whose terms as members of the Music Section Committee have just expired. Next, the present officers, J. Lawrence Erb, of the University, and Mrs. Elizabeth McNair, Mattoon, were re-elected for the ensuing year. By vote of the Section, it was decided to continue for another year the present Standing Committees with instructions that they make a special study of textbooks for the 1921 report. A Committee on Harmony was, by vote, added to the list, to make the report more comprehensive. The personnel of the Standing Committee follows:

History of Music—

Mr. L. L. Carl, Belleville, Chairman
Mrs. Blanche E. Haughey, Maywood
Miss Inez V. Goodsill, Galesburg

Musical Appreciation—

Miss Mabelle Glenn, Bloomington, Chairman
 Mrs. Homer E. Cotton, Kenilworth
 Miss Clara T. Dailey, Peoria

Chorus and Orchestra—

Miss L. Louise Bear, Decatur, Chairman
 Miss Clara E. Renfrew, Monticello
 Miss Maude B. Wallace, Normal

Prerequisites for Applied Music—

Miss Mary D. Phillips, University, Chairman
 Miss Nettie C. Doud, Springfield
 Miss Mary J. Maguire, Alton

Harmony—

Mr. L. W. Glover, Champaign, Chairman
 Mr. Ira McKinney, Urbana
 Miss Anna Kyle, Easton

In order to save time, the Supervisors present were asked to prepare their reports in writing, and hand them in before leaving. Fifty such reports were submitted. From the reports submitted the following data were prepared:

Theoretical courses given:

Harmony	28
History of Music	22
Musical Appreciation	20
(A large proportion of this work is done in composite courses.)	

Organizations:

Mixed Choruses	32
Girls' Glee Clubs	35
Boys' Glee Clubs	27
Mixed Glee Clubs	8
Orchestras	36
Bands	13

A number of schools maintain smaller organizations, such as trios. One school has a string quartet, another a Ukulele Club, another a Mandolin Club, and still another a Saxophone Club. *Eight schools give courses in Applied Music at the expense of the School Board.* Three schools report periodical musical contests.

The following address was then given:

The High School Band: Its Personnel and Organization

By A. A. Harding, University

The writer is very much interested in the high school band—in a selfish way, perhaps,—as his work is with the University Band, which draws much of its material from high school musicians. Not all high schools have bands, but they should have. They should also have orchestras, as well as glee clubs and a chorus. But the band might almost be termed “the indispensable musical organization,” as it is certainly an “all-purpose” one. In addition to enlivening the throngs at games, it leads the high school cadets in their parades, and should be capable of playing creditable concert programs at intervals during the school year. Wherever the band appears, that is the rallying point for school spirit and loyalty. It is a masculine organization, and appeals to the type of boy who resented being made to practice on the piano, because he feared the other boys might think him a “sissy.” Its greatest value, however, is in the opportunities it affords to ambitious and talented boys who desire to become expert players of wind instruments.

The problems confronting the organizer (or perpetuator) of the high school band are almost identical, though on a smaller scale, with those of the conductor of the University Band. As the writer's experience has been altogether with the latter type of organization, his remarks are based upon experience gained in organizing and conducting University Bands for a number of years. As a great majority of those who have applied for membership in the bands under his direction have been former high school players, and as he has found their weaknesses to be practically uniform, his suggestions are made with a view to correcting, as far as possible, those weaknesses in future aspirants to the college band. He hopes that eventually the high school players will all be instructed and their development supervised in such a manner that they may be accepted into the best university bands without examination or further instruction.

The selection of personnel and the organization of school bands is a special field of endeavor for the bandmaster. The plural form, “bands,” is used advisedly, as a new band must be organized at the beginning of each school year. (Most people do not stop to consider that fact.) After the band organization is established, the bandmaster can count on only two-thirds of his last year's membership as a nucleus around which to build the new organization. Considerable thought and care should be exercised in the selection of new players, as it is much easier to take a player into the band than to get him out.

“Efficiency” should be the watch-word in affecting and maintaining a band organization. Its practice should be analogous to the manner in which it is applied by the successful organizer or manager of a business enterprise. The shrewd supervisor of a manufacturing plant will distribute his employees in such a manner as to get the utmost from their capabilities. He will not permit everyone to do the kind of work he would like to do, for all would want to be inspectors. On the other hand, he encourages some to learn new and more remunerative trades, and assigns to others positions which they themselves did not believe they were capable of holding. He knows that he must have good workmen in all departments, or the product will be defective. In the same way the bandmaster must see that the good musicians are distributed through all the sections of the band, or the musical product will be faulty. A band is like a bridge in that it is no stronger than its weakest member.

The first step in organizing a school band should be to announce that applications for membership will be received at a certain time and place. Every one who plays a band instrument, and especially those who play other instruments, such as piano and stringed instruments, should be urged to try for places.

Attention should be directed to the decided advantages of membership, and that they have much to gain by trying out with nothing to lose. In order to facilitate the conduct of the tryouts, a printed "questionnaire" should be provided each applicant. In addition to the name, date, street address, phone number, age, and class, the following data should be obtained:

Instrument played by applicant; how long he has played; from whom he has had instruction, and how much; bands or orchestras he has played in; part played *regularly* (not the part he may have played once in a while in the absence of the regular player); what other band instruments he plays or has played (with a view to shifting him to another instrument if needed); whether or not he plays the piano or stringed instruments; if so, how much preparation and experience; the names of several pieces, both light and serious types, that he has played; instrument, or instruments, he owns, stating make and pitch.

The street address and phone number is quite essential in making appointments for tryouts and for emergency notification if the applicant becomes a member. The age is useful as a criterion of the applicant's comparative advancement. The class of which the applicant is a member is another important factor. Other considerations being equal, it would be a better "investment" for the future to take the player who is a member of the freshman or sophomore class. On the other hand, the more mature player is quite desirable. Notice carefully to see if the applicant's instruction has been secured from a teacher of recognized high standing. That it not always an indication of musicianship, because of the factors of talent and industry, but nine out of ten demonstrate the good teacher's preparation. The class of organizations, if any, that he has played in, and the part he played, is of some value, but is in no sense an absolute criterion of ability. A very important consideration is that of whether or not the applicant plays or has played the piano or some stringed instrument. A proficient pianist, violinist or cellist, for instance, would make a very desirable member of the organization because of his advanced musicianship. As soon as he had mastered the mechanical details of the band-instrument, his reading ability and musical understanding would assert themselves, and he would develop rapidly. The names of pieces played are helpful in gaining an idea of the class of music the applicant is familiar with, and are used in the tryout to select music for the examination.

As the school should own sufficient instruments, the matter of whether or not the applicant owns an instrument should not be a determining factor of any great consequence. However, if he owns an instrument it should be of a recognized good make, and it should be one that is *built* in low pitch. Low pitch as established by the American Federation of Musicians is A=440 (not A=435, formerly regarded as the standard low pitch), and is used by all first-class musical organizations in this country. As stated above, the instruments should be built to be played in low pitch only, not built in high pitch with slides to be pulled out for use in low pitch. The latter type of instrument is not satisfactory, as there is always difficulty in tuning, and the unintentional pushing in of slides in handling throws the instrument out of tune with itself. For the sake of uniformity and neatness in appearance, the instruments should all be plated. Saxophones are especially hard to keep presentable if they are not plated.

The writer uses a "code of estimate" which he has found to be helpful in conducting tryouts. As the personal characteristics and qualifications should be considered carefully, a blank form for the systematic notation of impressions is very essential. The code is of course not to be seen by the applicant, being attached to the questionnaire after it has been filled out and presented. The first point to be considered is that of personality. That is, whether the applicant's individuality is weak, mediocre or strong; whether or not he would be acceptable to the other members of the band; whether he would be apt to work harmoniously or would be a disturbing factor; whether he has initiative or is

passive; alert or apathetic; whether his general attitude is proper. In regard to the latter point, the writer believes that until a player realizes and admits that he has a lot to learn, he will neither develop himself nor prove of any service to an organization. The same thing applies to the matter of assignment; if he feels too good to play in the third band, he is not the type of person to be desired in any band. As a band can not be made up entirely of solo players, a player who is unwilling to accept a subordinate position is, also, undesirable.

The tryout should begin by having the applicant "run over the instrument" to warm it up and to limber up his lips and tongue. While he is doing so, the examiner can be ostensibly reading over the questionnaire, but in reality getting his first impression of the player, which is often the lasting one. Then he should be given some piece that he has played before. If it is a march, an opportunity is afforded to judge his sense of rhythm. This should be followed by pieces of moderate difficulty for sight-reading test, ending with a piece presenting a variety of rhythms and requiring musical understanding. A record should be made of the following points: tone—pleasing, musical, or harsh and "fuzzy" (breathy); intonation—intervals accurate or not; reading—rapid or slow, accurate or inaccurate; rhythm—well developed or not, regular or irregular, feeling for accents or not, natural sense or not; tonguing—keen or sluggish, clean-cut or thick, fast or slow; technique—advanced or rudimentary, whether or not developed at expense of accuracy; phrasing—articulation and breathing. An estimate should also be made of the applicant's general musicianship,—whether he understands what he is playing and conveys the composer's or arranger's intent.

Inaccurate reading is the source of most failures. Ninety per cent of applicants fall down on reading tests. Players who have talent, have strong embouchures and considerable technique fail because they can not read accurately. The cause is probably not so much in the kind of instruction they have had as in the amount. They have been put to playing in bands or orchestras before they were equipped. They had not learned to read to any extent, so they read what little they could and "faked" the rest "by ear." Most players in the average band are pushed too fast for their own good. They are put to playing solo parts, not because they are far enough advanced, but because some one has to play the parts. They can not, of course, play the parts correctly, so they play them any way they can, just so they hit the first and last notes with the rest of the band. They are victims of circumstances, but that does not make them acceptable for membership in the better class of bands, who play a type of music that demands absolute accuracy in reading. Those who have charge of high school bands should impress strongly upon the players the necessity of their perfecting their ability to read accurately. The writer's second and third bands are made up largely of players who can not read well enough to make the first band. It is as necessary for a player in a musical organization to read as it is for the football player to understand the signals. No coach would take or keep on the team a player who could not understand the signals and who would consequently "ball up" the team's plays. For the same reason, a band leader could not keep in the band a player who could not read the music and who constantly "butted in" and spoiled the work of the other players.

After all applicants have been examined, they should be divided into three classes: O. K. (those who are sure of places); N. G. (those who are not to be considered further); and Try Again (those whose status is still debatable, and who should be called for another tryout in competition with each other).

In assigning parts, the personal characteristics as well as the special talents of the players, or prospective players, should be considered. Some are well adapted to certain instruments, but would make a failure if assigned to some

other instruments. For example, those whose teeth are irregular should be advised not to attempt to learn the brass instruments, as they could never develop a strong embouchure.

As the clarinet, flute and piccolo parts present the greatest technical difficulties, they should be assigned to good readers. Former piano and violin players make the best material for those instruments because they are accustomed to rapid reading. The fact that they are accustomed to reading music written above the staff is, also, an element in their favor. As much band music is imperfectly engraved and printed, boys whose vision is impaired should not be assigned to the clarinet or piccolo parts. Mention might also be made of the fact that long, supple fingers are assets to clarinet playing.

The filling of the cornet, trombone and drum sections will take care of itself, as there will always be an abundance of players on those instruments. It is here that tact and persuasive ability must come into play. Certain players of the instruments just mentioned should be advised or induced to take up other less plentiful but essential instruments, such as altos, French-horns, basses, and baritones. The alto does not present any appreciable difficulty, but the French-horn, which plays from the same part, is the most difficult of all the brass instruments to master. The real French-horn is referred to; not the French-horn model alto or mellophone, which is simply an alto bent around into the shape of a French-horn. Real French-horn players are very scarce, and high school bandmasters will be doing their boys a favor and at the same time doing a service for bands in general if they will encourage some of their most talented players to take up the French-horn. Owing to their scarcity, young horn players have a much better chance of "making" the university, or other band where competition is keen, than if they played one of the more common instruments. However, those who take up the horn should be of such a type that they are willing to practice diligently to surmount the unusual obstacles which impede their paths. Owing to the fact that the tubing is twice the length of that of the alto, making it necessary for the use of the "upper partials" which occurs at closer intervals, an especially sensitive and flexible embouchure must be developed. The performer must have what is termed "a good ear." Those who sing well make the best horn players, as they are more apt to have a conception of the tone before striking it. Their attitude must, also, be such that they are willing to submerge their individuality in the organization, taking as much care and pride in the playing of a subordinate part as though they were playing one of the conspicuous solo parts. The inner parts of the band instrumentation are the ones which are most abused. Nine bands out of ten are hopelessly handicapped by incompetent alto, horn, second and third cornet, second and third clarinet and bass players.

The baritone, or euphonium, is the solo instrument of the bass section. It corresponds to the violoncello of the orchestra, and the parts written for it are of the same importance. The part should be taken by one, or more, of the most talented players. If no baritone players are available, shift a cornet or trombone player. Alto players usually do not make good baritone players.

Many people want to play the slide trombone, but few are adapted to it. The instrument is capable of being played the best in tune of all the brass instruments, but is usually played the worst. As there are no valves on the instrument, the different intervals are produced by shifting the slide, with the player's sense of intonation as his only guide. If the player has not that sense, or if he is careless, the result is appalling.

As stated, the bass parts are among those often taken by incompetent or weak players. Many are not, for obvious reasons, inclined to take up so large and expensive an instrument. The school should own a sufficient number of bass instruments, and players of smaller instruments can be transferred to them. The E-flat tuba part can be easily transformed into a treble-clef part, by men-

tally dropping three flats (or adding three sharps) from the signature. It may then be read as though it was written in the treble-clef, reading naturals as sharps and double-flats as flats. BB-flat basses are best taken by those who have played the baritone or valve trombone in the bass cleff. They will, of course, read the bass part an octave higher than they had been accustomed to reading the baritone or trombone part, as the bass is pitched an octave lower than the baritone.

The recent tremendous popularity of the saxophone presents a fresh problem to the bandmaster. Nine out of every ten saxophone players who will apply for places will be equipped with the C Melody instrument. As there are no published band parts for saxophones pitched in the key of C, the players should be told that they must arrange to secure a band saxophone if they are to get regular places in the band. In order to hold likely players, a temporary arrangement can be made by having them play oboe parts, which are the only available parts for instruments pitched in the key of C and reading in the treble-clef. This arrangement can only be used with light music, as the part would be heard in the wrong octave, due to the fact that the C Melody saxophone is pitched an octave lower than the oboe. In advising a player to equip himself with a band saxophone, the following order of importance should be considered: E-flat Alto, B-flat Tenor, E-flat Baritone, B-flat Soprano, B-flat Bass.

Of the reed instrument group, the double-reed instruments are the most difficult to master. What was said in regard to the advantages and possibilities of the French-horn might also be said here in regard to the oboe and bassoon. The scarcity of double-reed instrument players affords additional opportunity to the high school player, who should seek the "points of least resistance" when he competes for a position in the University band.

Most people think that any one can play the bass drum, whereas, in reality, the bass drum is one of the most important instruments of the band. Because of its conspicuousness, the part must be played most accurately. The bass drummer is a sort of assistant leader. In addition to reading and playing his own part accurately, he must sense the conductor's wishes and help impress them upon the rest of the band. He must have a highly-developed sense of rhythm, and should be capable of interpolating accents and other variations in dynamics instantly when indicated by the conductor.

The band organization of the school should own a sufficient number of instruments to insure a complete and well balanced instrumentation at all times. In addition to a bass drum and some of the larger and more expensive instruments such as basses, the equipment should include a number of the rarer instruments such as French-horns, oboes and bassoons. Interest in these instruments will be stimulated thereby, and make possible a complete instrumentation. The basses, especially the BB-flat basses, should be of the "helicon" type for convenience in carrying on the march. An important point in that connection is that the basses need not thus be limited to players of large stature. Of the helicon models the Sousaphone model is superior to the old-style helicon with its bell directed toward the front. The upright bell of the Sousaphone keeps the bass part from becoming too prominent. The instruments should all be of first-class make, *built in low pitch only*, in tune not only with each other, but with themselves.

Speaking of tuning the instruments, the band should own a large tuning gong, bar or fork tuned to the now recognized standard pitch, A-440. For tuning band instruments, however, the writer has found it more practical to tune the band to a B-flat gong pitched complementary to the A just mentioned. That permits the tuning of all the brass instruments with open tones. The old method of tuning the band to the clarinet, or even the oboe, was highly inefficient, due to variations in the player's embouchure, reeds, or the temperature.

As has been stated, the school band is an all-purpose organization. In order that it may be efficient for parade purposes as well as for the playing of concerts, a "happy medium" must be struck in its instrumentation. There must

not be an overwhelming proportion of brasses, such as would rob a band of the necessary smoothness for concert purposes. On the other hand, there should be sufficient number of heavy-toned and percussion instruments for parade playing. For the latter purpose, there should be a complete drum section, with cymbals played by a special player, good basses and trombones, and—most important—prominent melody instruments. A band never sounds any louder than the melody! The very best arrangement is to have a second band and augment the sections mentioned with some of the best players in the second band.

The writer has a very high regard for the value of the second band. Many players who are not now ready for the first band would, if given an opportunity to develop in a second band, soon become acceptable material for the first band. It is often not best for the player to be given a place in the first band at once. It often gives him an exalted idea of his ability, and thereby spoils an otherwise useful musical career. The second band becomes a training school and a reservoir from which vacancies in the first band may be filled at any time. It is helpful in upholding the morale, as the members of the first band will feel an added sense of pride in their organization. In case the uniforms are the same,—and they should be,—the members of the first band should be distinguished by an emblem or the school "letter."

Reverting to the matter of efficiency, something should be said about systematizing rehearsals. Preparation is a great factor in successful rehearsing. A permanent seating arrangement should be planned and indicated by chalk or painted marks on the floor. There should be a property-master, whose business is to put each music stand, chair, bass-drum, bells, tympanum, etc., in its proper place, well before the time for the rehearsal. The librarian should follow him and put each folio on its proper stand. (They should all be numbered or marked with rack number.) Each player should be assigned to a certain numbered chair, so that the secretary or attendance clerk may quickly record any absentees by noting the empty chairs. The rehearsals should be conducted in a business-like manner, with no "coopering," unnecessary talking, arguments, or lengthy corrections. All of those distracting influences tend to break down interest.

Everything possible should be done to prevent loss of time during the rehearsals. Before the music is distributed in the folios—it should never be distributed during the rehearsal—the bandmaster should carefully "edit" all of the parts. If the piece does not have numbers provided for the purpose, the bandmaster should mark numbers at frequent intervals throughout each composition, in order that any section may be rehearsed as much as necessary. Each part should also be marked to indicate the folio into which it is to be placed by the librarian. Colored pencils will be found most effective for editing. The bandmaster should realize that most of his work must be done before the band meets. Every effort must be made to avoid loss of time at rehearsals, as the total time lost during a delay at a rehearsal or concert is *multiplied by the number present*. The players should be permitted, and urged, to take their music home for daily practice between rehearsals. In order to keep a record of the folios taken away, the librarian should require each player to receipt for the folio and sign an agreement to return same at the next meeting of the band. Even if it is impossible for him to be present, he must see that the music is there; otherwise the player who plays from the same folio with him will have no part. Cards with a printed agreement and spaces for signatures and dates are quite convenient in issuing folios for home practice.

Again following out the principles of efficiency, the bandmaster should select such pieces and arrangements as will exploit his best players. Just as a successful football coach builds his plays around his star players, so the band-leader should select such pieces as will best display the talents of his musicians. The matter of arrangements is a very important one. Some editions are well suited for bands with a certain type of instrumentation, but are totally impossible for bands having a different type of instrumentation.

The band library should contain a well-balanced assortment of music. There should be popular music, of course, but that which has no musical merit,—just trash,—should be eliminated. There should be an abundance of worth-while, serious compositions of such a grade of difficulty as is within the capabilities of the band. There are many excerpts from good, wholesome works (including symphonies) that do not present difficulties beyond the high school band. Much more preparation should be given to the boys on serious music, in order that they may be enabled to become members of the best college bands, that specialize in the playing of the higher forms of music.

The man—it should be a man—who has charge of the high school band should be a man of high musical ideals, patient, sympathetic, and especially qualified in other ways for that special type of work. Some of the most successful teachers of boys' bands do not attempt to work with more advanced organizations. The bandmaster should be a practical performer on each type of instrument. He can thus show the players simplified fingering and other "tricks of the trade." He can, also, appreciate the difficulty of certain passages, and know what he can expect from his players. He will often be placed in the paradoxical position of being at once an optimist and a pessimist; i. e., optimistic enough to believe in the ultimate success of the organization, but pessimistic enough to appreciate the difficulties which always arise, and be willing to give the unsparing thought and energy necessary to surmount the many obstacles which will come in his path.

The suggestions which have been offered have been inspired by long experience with bands of a type similar to those under consideration. It is the writer's hope that his observations may be helpful in the establishment and development of many excellent high school bands throughout the state.

The discussion, "Music Activities in School Hours," opened by Miss Inez Goodcill, of Galesburg, brought out the fact that the practice of High Schools throughout the State is decidedly diversified, but that the tendency is strongly in the direction of including all musical activities during school hours. Of the fifty reports received, from one-third to one-half reported that they do a large proportion of the organization work during school hours, while the work in Applied Music is done altogether in school hours. Some schools go so far as to allow a portion of the rehearsing for the operettas and other entertainments to be done in school hours. Miss Goodcill's paper follows:

Music Activities in School Time

Inez Goodcill, Galesburg

In considering the problem of musical activities in school hours, it is not necessary for us to outline the conditions which now exist. We all know that in the smaller high schools, whatever musical organizations exist have to carry on their work outside of the regular school day. We also know that in the larger schools, unfortunately, practically the same condition prevails.

No more is it necessary for us to argue here for the right of activities to be carried on during school hours. Those of us who have had any experience at all are only too familiar with the exhaustion of both pupil and teacher which so often prevents full and satisfactory results in after school rehearsals. There is an even more important reason why the activities should have a place in the student's daily schedule. Never will the musical organizations be given the recognition due them as an important phase of school work until they are a part of the school day.

Our problem of securing that place for them is chiefly one of administration, and it is from that standpoint that we shall discuss it. We have one big question confronting us, and that is: How can the activities be given their place in the school schedule? To answer that, we must answer two other questions.

A large proportion of our high school students are planning for more advanced training. Colleges, universities and technical schools rightly have requirements for entrance which our students must meet. In order to do this there must be almost a full day's schedule of English, Mathematics, History and so on. We must determine, then, how we can avoid conflicts with other necessary recitations. That is the first thing which I ask you to answer, if possible. Some of you will probably suggest the use of the last two periods of the Smith-Hughes school day, the seventh and eighth periods. How, then, do you avoid conflicts with Smith-Hughes classes reciting those hours?

In many schools, the principals insist upon the students taking regular courses that hold recitations five periods a week. Your glee clubs, orchestras and bands probably practice once or twice weekly. How do you reconcile your principals to the students' having irregular schedules when your activities are in school hours?

These are the questions which we want some of you who can do so to answer for some of us who have not so far been able to answer them satisfactorily.

(Note. In the discussion, it was suggested that the problem might be solved in scheduling where, as in most schools, there are several sections in each of the required subjects. Those electing to take the musical organization courses should then schedule their regular work in non-conflicting sections. As for the matter of University entrance requirements, since the University now accepts music, applied as well as theoretical, for entrance, that objection, too, is disposed of.—Editor.)

Miss Mary D. Phillips, Chairman of the Committee on Prerequisites, reported that, since the last High School Conference, the University had voted to *accept for entrance* one credit in Applied Music if preceded by two full years of work in the same specialty and if accompanied by one credit of acceptable Theoretical Music. This announcement introduced the last topic on the program, "University Credit for Applied Music in the High School," which developed into a discussion of the interpretation of this action and its probable effect. The Section adjourned at 5 P. M.

The Executive Committee for next year is as follows: J. Lawrence Erb, University, Chairman, 1922; Mabel Glenn, Bloomington, 1921; Edna King, Joliet, 1921; L. Louise Bear, Decatur, 1923; Mrs. Homer E. Cotton, Kenilworth, 1923; Mrs. Elizabeth McNair, Mattoon, Secretary, 1922.

14. PHYSICAL EDUCATION SECTION

The Physical Education Section met in the Woman's Athletic Association Room of the Woman's Building, Friday morning, November 19th, at 9 o'clock, Mr. John L. Griffith presiding. Fifty were present at the beginning of the program. Mr. Griffith opened the meeting with general announcements and a brief statement of the purpose of the meeting. Mr. Caulkins, Manager of the National Physical Education

Service, gave a short talk upon the need of Physical Education which the examinations taken during the war had shown. He said the "aim of present Physical Education was the establishment of health habits." He then explained the Fess-Capper bill, a bill before Congress, as an agreement between the national government and the state to provide efficient physical education for every child between the ages of 5 and 16, and urged all present to help in getting it passed.

The following papers were presented:

1. Hygienic Objections in Physical Education—R. A. Holderby, Joliet High School. A short discussion on the value of monthly hygiene talks and every day hygiene talks and reports followed.
2. Educative Objectives in Physical Education—P. E. Belting, University.
3. The Purpose of Competitive Athletics—F. J. Winters, University. A discussion of the value of the all-star team versus the intramural teams followed.

Mr. H. V. Church of Cicero High School presented his subject by giving a printed working plan of Hygiene in the High School.

In the afternoon papers were presented by Dr. Gertrude E. Moulton, of the University, on Hygiene in the High Schools, and by Miss Ruth Glassow, of Macomb, on the Girls' State High School Athletic Association.

The only papers received were those given by Professor Belting and Mr. Winters an abstract of Dr. Moulton's paper, and an outline of Miss Glassow's report. They are given below:

The Educational Value of Physical Education

Paul E. Belting, University

The term *education* is used to designate a change in the individual, an experience which is purposive or directive. When the experience or the change in the individual is of such a nature as to leave him better prepared to meet the obligations of society, that change or experience is called educative. Or, as designated by Mr. Dewey: Education is the transmission of the *quality* or the worthwhileness of experience until it partakes of the interests, purposes and ideals current in the social group.

Having thus defined education, let us look for a minute at the meaning and significance of educational values, educational aims, and educational objectives. The term value is used to denote the worth of an object for its own sake, or to denote the worth of an object for its own sake, or to denote the quality or the satisfyingness of the activity leading to an end desired. Educational objectives mean the results aimed at through instrumental values. To have an objective means that one knows where he is going. An aim means foresight of alternatives and the consequences attended upon acting in a given situation in different ways. The end that is expected or anticipated is used to direct observation and

experiment. Logically, therefore, the terms *educational aims* and educational objectives are the same.

Educational aims vary from the very specific, such as the teaching of $3 \times 5 = 15$ to the exceedingly complex, such as education itself. On the one hand, the more specific the aim, the more definitely and the more directly can one shoot. Moreover, the more specific aims of education are more easily measured. On the other hand, the broader and more general aims have more ramifications. To a certain extent the broader aims are better because more can be placed under them at one time. If the list of educational aims is too long it is very easy to become tangled up and confused, so that it is impossible to criticize one's own procedure. If the list of aims is too short there is not enough chance for sufficient points of contact, different points of view or different emphases, so that large portions of education are left out in this one-sided and narrow philosophy. Hence, the function of the more general educational aims, as stated above, is to give a point of view which is elevated above the details of life from which to survey the field to see how the details of subjects are distributed and proportioned.

Let us name several lists of aims as stated by different educational writers from different points of view and perhaps for different emphasis. Mr. Dewey names these:

1. Executive competency in the management of obstacles and resources.
2. Sociability or interest in direct companionship.
3. Aesthetic taste or the capacity to appreciate art in some classic form.
4. Trained intellectual method.
5. Sensitiveness to the rights and claims of others.

Another writes names these:

1. Occupational:
 - (a) Home making;
 - (b) Vocation for a livelihood;
 - (c) Citizenship;
 - (d) Enjoyment of leisure;
2. General:
 - (a) Health habits and attitudes;
 - (b) Moral conduct;
 - (c) Breadth of view;
 - (d) Scientific attitude;
 - (e) Progressive attitude;
3. Psychological—(for want of a better name):
 - (a) Knowledge;
 - (b) Appreciation;
 - (c) Skill.

The High School Conference, more specifically in the field of secondary education, states these aims with which you are all familiar: Economic life, political life, social life. Participation in the three leads to health, wealth, association and beauty. Each of the four are further subdivided in terms of the curriculum.

The so-called N. E. A. list advocated by the committee, of which Mr. Kingsley was chairman, also states these:

1. Health;
2. Command of fundamental processes;
3. Worthy home membership;
4. Vocation;

5. Citizenship;
6. Worthy use of leisure;
7. Ethical character.

Any one of these lists of aims fulfills the conditions laid down in the opening paragraphs of the discussion. Let us take the N. E. A. list and write in some of the details under each aim as applicable to physical education.

Now, educators generally have been more or less conscious of certain aims of education which varied from time to time to suit the philosophy current in society, but for the first time in the history of America we are beginning to realize the significance of health as an aim, both for individuals and for society. The high schools, and the grades, for that matter, must see that a sound foundation in physical education is laid in order to protect the boys and girls against inefficiency and contagion. The health of each person is an asset to each community, while sickness is a great liability.

One of the difficulties with the health program has been that society in some respects has remained on the level of the pioneers so that it possesses not only their virtues but also their defects. In this country we are still rigorously maintaining the colonial doctrine of individual liberty so that we refuse to interfere with affairs of physical welfare, thinking that such an interference leads to the destruction of the sanctity of the family. Therefore, scourges like measles, whooping cough, tuberculosis, have not been effectively reduced. Such afflictions were, and still are, regarded as private matters. Industrially, commercially, economically, politically, socially, this country has grown away from pioneer life to such an extent that group life with certain group controls is necessary.

Hence, one of the problems of physical education, of which the medical problem is one, is to fight the prejudice that has developed against it. The new social program demands that social inertia be overcome. Another big problem is to place physical welfare, including the medical welfare of children, under the control of the school. Occasionally a fight will have to be waged against the vested interests of the medical profession. An intelligent public opinion must be developed in order to get the most enlightened man on the boards of health.

If we only consider the physical education program as one which is concerned with medical inspection to determine defects, the present boards of health may continue to function. But the program of health must not only be preventive; it must be remedial as well. It will be concerned with such problems as malnutrition, play, recreation, the worthy use of leisure, home-making, good of citizenship, and even the development of ethical character.

Such a program can only be carried out by the school. When society realizes, as it must, the necessity for physical education, it will employ on its staff health teachers, nurses, doctors, supervisors of the physical welfare of the school pupils. Not only is there this great opportunity for the proper care of health presented by this American system of public education to which we have committed ourselves, but also there are great dangers to health in the system itself. We have learned in a way to take care of defects, but there is little that we know of the way by which to stop measles. We have committed ourselves to a compulsory system of elementary attendance and are now demanding universal secondary education and passing compulsory part-time and continuation school laws, but we are giving too little attention to the size of the school grounds, the amount of space in which children have to play. We are compelling children to come to school, but we are paying too little attention to such problems as seating, ventilating, eye strain and other equally alarming conditions. We are giving tests and measurements without number to determine mental alertness, but we have scarcely studied the problem of the part that physical alertness plays in the outcome of such tests.

We are just beginning to provide gymnasiums; we are just beginning to study the problem of malnutrition; we are just beginning to campaign against bad teeth, and we are just realizing that the school is the best agency to handle that problem. As we said before, we have thought such were private affairs, but when we realize that the individual lands in the hospital or the penitentiary because society did not give him a chance, we see how heavy are the social obligations resting upon us in these respects.

Wouldn't it be a sensible article in the creed of a high school to announce that high school pupils would be guided through critical periods of development with the best possible physical health and vigor? To do this it must begin with a thorough physical examination to note defects and to prescribe certain individual treatment. It must notify the home where certain medical care is needed or provide medical care itself. It must indicate certain tasks of physical improvement that it can much better perform than any other agency. It will give a thorough course in personal and community hygiene, the biology laboratory will afford an excellent introduction to the scientific interpretation of certain vital physical facts that the home does not, but ought to, teach, and give an understanding of the elements of bacteria as applied to food and household hygiene.

The high school will require everyone to receive physical education with as much time spent on it as on any other subject and given perhaps *during* rather than *after* school hours. The school may be divided into two groups—the boys and the girls. Following the scheme of the army, each group may be further divided into four divisions on the basis of size and physical development of each group under the direction of one of the regular high school teachers. Group games, such as potato races, blackman; mass athletes, such as relay races; combat; rough and tumble, like wrestling, tugs of war, and highly specialized forms of athletics such as baseball, basketball, track or football, will constitute the physical education courses, in addition to a few minutes of setting up drill for each individual. Only under some such systematic scheme may we hope to do our duty to the boys and girls of today, the men and women of tomorrow, in the country as well as in the city.

This program does not eliminate athletics, but will help to bring the beneficial results of group contests within the reach of all. Such a program realizes that physical education is broader than physical training; that there are other problems to be considered. Yes, there are other aims in physical education. We have long held to the idea that there are certain form subjects—such as reading, writing, spelling and arithmetic, and certain content subjects, such as history, literature and geography. Now, the former are necessary as tools, but the latter are excellent in value because of the ability to realize some of the other aims of education besides the command of fundamental processes. Physical training in the past has been largely a tool subject, but it is entirely possible to place physical education in the list of content subjects as well, some evidences of which will appear in the following paragraphs.

We have already discussed the aim of health with its implications for education. Other topics on this program are concerned with the hygienic and recreative side of physical education. So I shall confine the rest of my paper mainly to a discussion of physical education through games as a means of developing citizenship and ethical character with a little mention of the aim of knowledge and culture.

In the elementary school it is entirely feasible and legitimate to emphasize the importance of physique in biographical history and heroic tales which the children study. Most of us as children were struck with the prowess of Jack the Giant-Killer; the wonderful physical ability of Samson; the untiring efforts of Ulysses in his travels; and the tremendous power of Hercules in all of his exploits. Chivalry appeals to the high school youth partly because of the strength and endurance physical skill demanded of knighthood. Perhaps the

youthful veneration for Washington in his struggle with the Indians, his physical endurance and agility, as well as his matchless strength in battle, has the same explanation. It seems to me it is not out of place to call attention, in connection with our heroes such as Washington, Jefferson, Monroe, Adams, Lincoln, Grant and Roosevelt, to the well nigh perfect physical body. This perhaps is one reason for their great influence in American life. It is the business of physical education people to develop a content about this subject—a content which will refer in the study of a great many subjects to the physical well-being of society. Moreover, the understanding of the value of physical strength today in American life is perhaps as cultural to the ordinary individual as a knowledge of the classic languages because society is beginning to think of culture as a knowledge of the commonplace. In other words, culture comes as a result of right thinking, right feeling and right acting in respect to the elements of one's own environment.

Some of the elements of citizenship and ethical character appear in a consideration of group games as a part of the physical education program. The athletic group has rightly held a place of prominence in the physical, intellectual and moral education. The school has insisted and ought to insist on clean sport so that a premium is placed on fairness, skill and thinking. No longer is the typical athlete the bully who has tobacco juice oozing from the corners of his mouth; no longer is the typical athlete the freak who wears a little cap set over one ear on the side of his head and has his trouser legs rolled up half way to his knees; no longer is the typical athlete the one who does not study and who fails in his work; no longer is the typical athlete the one who considers that the best football player is the one who slugs the hardest. Now, the typical athlete is the one who does measurably well in school; now the typical athlete is the boy who plays with all of his might; the boy who abides by the decisions of the officials as well as to follow the orders of the coach; and finally, the typical athlete is the boy who is willing to give and receive the hardest knocks, remembering that the harder he falls the higher he will bounce, and to him the purpose is found in winning the game for his school.

The idea of winning is a legitimate desire which in itself is not worthy of criticism. The coach or the principal who says that his team does not play to win, either hasn't understood the laws of learning, or wants an alibi for the team's defeat. To have taken away the tremendous ideal of winning would have deprived society of many of its great achievements. Business, governments, churches, homes, schools, have ever been desirous of success, but these institutions at times have used wrong methods for accomplishment, which methods society has condemned, and ought, rightly, to condemn. The school seldom thinks of being so drastic as to abolish algebra because some teachers have assigned one hundred and fifty quadratic equations to be solved for one recitation period. The method is condemned because perhaps none of the pupils can succeed. If coaches use wrong methods the remedy lies in reformation of their tactics and not in the elimination of the ideal of winning. To win, but by fair means, is worthy of us all in our civic relations.

The present democratic governmental and social virtues are the result of the American spirit to play the game and abide by its rules. The chief trouble with the Latin-American countries in their political relations is that they lack the essentials of sportsmanship. Across the Rio Grande a defeated party makes its own rules and begins to enforce them with the rifle. The imperial German government with its armies brought the condemnation of the world upon its own head essentially because it made its own rules.

Purpose of Competitive Athletics

F. J. Winters, University

Believers in the need of a strong and healthy body and in education of the brain through the muscles and sense organs are fast classing into the majority. There was a time, not so remote, when the need of economy in the expenditure of school money presented itself, that the physical director was discharged first, possibly to be replaced by an instructor in music. Now the need of physical training and athletic pursuits is so generally acknowledged I need not take the time to establish their reason for existence. I take it that my audience of educators is in perfect sympathy. I shall endeavor to give you a few of the many benefits to be derived from competitive athletics. It is only by considering things in their broad relations that it becomes possible to estimate their value. It is easy to misjudge and to put under condemnation a thing of priceless value because the eye is turned on some minor consideration, or upon some defect or evil connected with it, instead of upon the thing as a whole.

Let us first consider, then, the benefits to the individual. Youth has always sought and found an outlet for animal spirits in play and games. It is in the blood, or an inheritance, evolutionists tell us, from the hunting and fighting discipline of primitive man. Competitive athletics develop to a great degree physical courage. This development is considered by many, particularly by the players themselves, to be one of the greatest advantages of the game. Athletics give vent to the instinctive craving for action in boys, especially those of strong temperaments, the vitally powerful, energetic and restless. Every boy of force craves to express the stuff that is in him. The temperament that makes the athlete must have some outlet in contest or struggle, in a wild expenditure of energy with proportionate excitement. Athletics open a field of achievement for boys. Boy nature craves achievement and approbation, action that brings honor and applause. The possibilities in the use of this impulse for a broader educational discipline are almost limitless.

They learn implicit obedience, and it is not the obedience given to parents or superiors, but the obedience given to one's elected equals, and is the same absolute, unquestionable obedience that a subject gives the king. The ability to take orders from elected authority, without explanation or reason, is valuable, and nowhere is carried out to any greater degree than is the obedience to the orders of a captain of a team. The individual learns the lesson of complete obliteration of self; he is simply a cog in the machine, simply a part in the unit as a whole. The competitive game develops and encourages the spirit of fair play. While courtesy is inherent in most of us, its manifestation becomes necessary in sports. Self sacrifice is inculcated by the games, as subordination of the individual for the good of the team is one of the most stringent requirements. The regimen of the school room does not call forth the qualities of self reliance, initiative, daring, promptness and decision in action, executive traits essential to well developed manhood. The youth of this day must learn to endure hardness, and the only avenue can be found in the stress and strain of a race and the shock of the football field. To do and dare regardless of self is the essence of true manliness. Proper outlets for physical energy are especially needed in this day, when habits of life tend away from all vigorous bodily exertion. While the adult has been reduced to such a nice adjustment that he exists in the environment of apartment houses, steam heat, elevator, street car, automobile, quick lunch, easy office chair and desk telephone, and still maintains a fair degree of usefulness, without any muscular effort, the boy has within him animal energy, bequeathed from sturdy farmers, hunters, lumbermen and sailors, and this vigor must find wholesome expression in play. The boy must learn how to achieve, accomplish and conquer. Real efficiency in any field of human endeavor is largely conditional on keen senses, steady nerves, and proper coordination of all

functions. Some qualities of mind and character can only be attained through physical experience and physical struggle. Our fathers were big in body, deep chested and broad shouldered. But with those stalwart physiques and as a result of their physical struggle they possessed a virile type of manhood, physical courage and masculinity,—characteristics which go with strength of body, and the consciousness of physical power. To retain for the race the virile characteristics of our fathers we must provide as far as possible the conditions under which they were developed. I know of nothing so well adapted to take the place of such early experiences as competitive athletics. It is good for a man to match his strength against the strength of a competitor, to be compelled to test his powers, to struggle to win, to suffer defeat. Such experiences develop endurance, grit, self confidence, self control, and courage. Inter-school competition gives him the confidence and courage attained in performing before large crowds.

The greatest proof that an athlete develops these alleged characteristics was brought out in our recent war. Former athletes were acknowledged to be the best material for the developing of officers. Several large universities have made investigations in regard to their former athletes. Almost without exception they were accepted into the service as being physically sound, which explodes the old popular bubble of illusion, that athletics were deprecatory from the standpoint of permanent physical injury. It is also interesting to note that a very great per cent of these men received commissions in one branch or other of the service.

Let us now consider the benefit to the spectator. We shall use football, because it is the most important and doubtless the most popular sport, and just at this time our interests are centered in the local contest.

Football furnishes a wholesome, intense entertainment, under the most ideal conditions,—open air with plenty of exercise. After witnessing a game one wonders if the contestants or the spectator has had the more strenuous afternoon. The wild contortions of an individual under the excitement of a point winning play are like unto nothing else in activity. In witnessing the contest there is a telepathic sympathy developed between the player and the spectator. He feels unconsciously the spirit of courage, or sacrifice, or heroism, whatever it is, and is quick to condemn smallness or meanness. This is often demonstrated in the ready hiss that meets an unjust or unsportsmanlike remark in the crowd. Large numbers not actively interested in athletics, but members of the college, are drawn to the contrast through the interest of others, or a sense of loyalty or duty. So to the athlete's interest is added the general non-athletic student body interest, the interest of the alumni, the faculty, the attached citizens. There is a unity of school and town. The power of the spectator in general as a creative force in the higher development of sports has been profound. He stimulates the development of skill, he furnishes much of the money that supports contests, he even adds something to the social sentiment that impels youth to participate for its own good. In return he experiences the pleasure of witnessing competitive sport, he is thrilled and uplifted by the heroism and courage of the contestants, and enjoys the bonfire and celebrative spirit which follows the victory. Or, if defeated, he also, as much as the players, feels the "never give up cheering win or lose atmosphere" of the genuine sportsman.

The many characteristics displayed by the competitors and the enthusiasm developed during a contest act as an incentive or stimulus to individuals. These they strive to acquire or develop in their own make up. This is accomplished by part of the student body through intra-mural athletics, which some educators contend should be the only form of athletics to be fostered in an institution. This may be so, but by experiments it has been proven that without inter-school athletics there is little or no interest exhibited in intra-mural contests. Several of the large schools of the country, in which Michigan was one, cancelled all

their playing schedules, at the beginning of the war, and endeavored to put all their energies in developing the masses through athletic contests. It was noticeable in every institution that with the incentive and example of a Varsity team gone there was very little desire for athletics of any kind. Varsity or representative school teams set the example and are a goal for all students interested to aspire to. After a good inter-school contest the spirit and enthusiasm is very clearly reflected in games played the following week. There is the inherent tendency to pattern after the admired example. The intra-mural contestant has the highly coached, perfectly working first squad as a goal. There is always the possibility and desire to enter in this realm himself. This stimulus is the vital hinge upon which intra-mural athletics swings. The chief endeavor should be to give the benefit of athletics to the greatest mass possible. This can only be accomplished through intra-mural contests, as the representative Varsity squad can only include a negligible per cent of the whole. It has been proven as I have stated before, that the carrying on of intra-mural sports has been reduced to the minimum, where inter-school competition does not exist. Mercenary as it may seem, there is great need for the gate receipts, made possible by the inter-school contest. Most institutions are hampered through lack of funds, and I do not believe there are many faculties who would enthusiastically divert funds from purely academic purposes to the furtherance of inter-class contests. Athletics to live must be self supporting and that is only attained through inter-school contests. If the boy *en masse* must reap the benefit of the aforesaid good derived from participation in games, we must continue the inter-school competitive athletics. By abolishing them we "kill the goose who laid the golden egg."

So far we have considered athletics from the viewpoint of the spontaneous primitive and original impulses and interests that naturally create and develop them. There is a morbid and unhappy influence which, if it continues, will doom competitive inter-school athletics irretrievably. Among the spectators there is always the ultra sporting set, the pure sensational seeker, the gamblers and loafers who turn the contest into whatever pleases the degenerate fancy of each. The moral drag of this outside irresponsible crowd, namely the gambling element, influences for evil the atmosphere surrounding athletics. Their sentiment influences susceptible members among the student body, the alumni and the athletes themselves. This betting evil has so recently come to us in the late baseball scandal, and, in minor degrees as yet, it is affecting our present sport.

Little need be said of inter-school athletics as an advertising agent. Both in high school and college attention has been called to most obscure institutions through this medium. I once heard the President of the Chamber of Commerce in a community state that the local high school basketball team had done more to advertise the town in the state by its achievements in the state tournament than could have been done by the expenditure of thousands of dollars.

Another instance of the advertising which athletic competition gives a school is brought out by a small college in Indiana, which hired one of the leading coaches of the country, at a large salary, to build up the athletics. This college is being brought from obscurity into acknowledged recognition.

In conclusion let me make an urgent plea for the advancement and protection of our school athletics, for unless we as educators adhere to their support, they will be doomed in the surge of this growing and paralyzing menace.

Hygiene in the High Schools

(Remarks given by Dr. Moulton)

With an interesting inter-class hockey game on the south campus beginning in fifteen minutes, I make no apologies for cutting my remarks short.

Here at the University we are giving a course in hygiene which it would be well to put back into the earlier years of the students' lives. Hygiene ought to mean a practice of the principles of right living, rather than a mere knowledge of them, and the high school age or even earlier is the time to start the boys and girls into trying out for themselves the various measures advocated by hygiene specialists. The text we are using here this year is a series of seven pamphlets, containing rules formulated by the Hygiene Reference Board of the Life Extension Institute, and at each lesson the girls are given some definite law of health to try out and report on at the next session. Some of the reports brought in so far are concerning: the reaction of the students to cold baths taken according to instructions,—the result of daily warm baths and brisk rubbing,—the ability to take, every day, certain exercises which are not too much to expect of any normal individual,—the amount of exercise which can be taken daily without breathlessness and inability to recover normal heart action after short rest,—the time of walking five miles, and the reaction that day and the day following,—the outline of the weight-bearing foot with the outline of the shoe worn on that foot, superimposed,—a trial schedule of the students' time including habits of toilet, etc.,—the results of sleeping out of doors or with head in window for a considerable length of time. I wish some such course could be made general in the high school, so that when the students reach the University they have definite first-hand information of the so-called rules of hygiene. In the physical education department here they have done two things along this line that I wish could be done everywhere. In physical education they have made a functional test of heart, to the extent that they have taken the pulse before exercise, after a definite amount of exercise, and after a rest of five minutes. This gives them an idea of the reaction of the heart to exercise. They have had the girls working at definite problems in addition to their regular floor work, so that the girl with weak abdominal muscles or foot muscles, with constipation, with headaches, or with menstrual pains, has worked with herself and experimented with herself, with frequent reports as to her progress and consultations with her instructors. Since we are built to be "going concerns," the closer the connection between the hygiene department and gymnasium the better.

The Illinois League of High School Girls' Athletic Associations

Ruth B. Glasgow, Macomb

1. Present problem of the League is advertising.
2. Suggested plan for advertising:
 - a. Letters telling purpose and work.
 - (1) To high school pupils and faculty.
 - (2) Dues should be increased to \$5 to provide funds for letters.
 - b. Personal advertising.

Local associations and memberse of executive committee to stimulate interest in neighboring high schools.
 - c. Newspaper articles.
 - (1) League must furnish news material. This might be done by:
 - (a) Giving tests for honor points in the League at a central meeting place, possibly in connection with the boys' district basketball tournaments.

3. Information on the League and a copy of the constitution may be obtained from the executive committee: President, Miss Lydia Clark, Illinois State Normal, Normal, Ill.; vice-president, Miss Grace Moberly, Illinois State Normal, Normal, Ill.; secretary-treasurer, Miss Margaret Byrn, Township High School, Highland Park, Ill. Committee-at-large: Miss Margaret Tourley, Township High School, Lincoln, Ill.; Miss Rose Giles, Sterling Morton High School, Cicero, Ill.

15. PHYSICAL SCIENCE SECTION

The Physical Science Section met in Room 100 of the Chemistry Building, Friday morning. There were 160 present. After making a few introductory remarks, the Chairman, T. M. Barger, introduced H. B. Black, of Mattoon, who gave a very interesting talk on the topic, "Objectives as a Basis for Curriculum Reconstruction." The second topic for discussion was "How Teaching Should Be Modified to Agree with Recent Developments." Dr. Crew, of Northwestern, and Dr. Hopkins, of Illinois University, gave very interesting and instructive talks as to how our teaching should be changed to meet present day demands.

The nominating committee, with Dr. Watson as Chairman, moved that the Executive Committee of this Section be increased to six members. It was carried. He then gave the following report:

B. S. Hopkins, University, Chairman	1921
C. M. Wirick, Chicago	1921
S. Aleta McEvoy, Rockford, Secretary	1922
H. H. Radcliff, Decatur	1922
E. H. Williams, University	1923
F. D. Barber, Normal	1923

The motion was made and seconded that the Executive Committee follow the same division as this year, i. e., a joint meeting in the morning and separate division meetings in the afternoon.

At 2:00 P. M. the Physics Division met in Room 103, Chemistry Building, and had a spirited discussion as to the best method of using projects in the teaching of Physics. T. M. Barger presided and there were seventy in attendance. It was moved and carried that the Physics teachers of the State be asked to write at least one experiment and send it to the committee; the committee to have mimeographed copies of them made to be placed at the disposal of the teachers.

The following resolution was read: "Resolved, that it is the sense of the Physics Section of the High School Conference that the College Entrance Requirements therein be revised, and invite some speaker from the Northwestern entrance requirements committee to come and speak on the subject at the next meeting."

The Chemistry Sub-Section met in Room 111, Chemistry Building, with Mr. Charles Gooding of Champaign presiding. Mr. C. E.

Osborne's paper on "How May Local Interest in Chemistry Be Increased" was read in Mr. Osborne's absence by Mr. J. B. Casserly of Urbana. Following the paper there was a general discussion of various devices for increasing interest in Chemistry, several successful plans for giving an exhibition or open house being presented. The organization of Science Clubs was also discussed. Mr. C. M. Wirick led the discussion on the topic, "How May the Chemistry Class Serve the Community."

A motion was carried requesting the Program Committee to designate a committee of three to report next year on the desirability and feasibility of uniform text books in chemistry.

Attendance about fifty.

Following are the papers, in order of presentation, as read at the Physical Science Section:

Objectives to Be Sought in Reorganizing the Curriculum in the Secondary School

H. B. Black, Mattoon, Ill.

Dr. Hollister has been very anxious that "The High School Conference" make some very definite contribution to education. Knowing every phase of secondary work as he does, he has felt that it is not clear just where our present curriculums lead. So at his suggestion committees have been at work trying to determine what the objectives of secondary education should be. It is my task to bring to your attention the work so far as it has progressed.

Last year, as you recall, Mr. R. L. Sandwick presented a report of one of the committees that had been working on the problem of objectives. Their report recommended that the objectives could be included in four main heads, i. e.: "Health," "Association," "Beauty" and "Wealth." By health the committee means not only complete body development, but mental development that truly would realize the idea expressed in the phrase, "Mens sana, in corpore sana." The courses in physical training, athletics, games, physiology, hygiene, etc., now given aim at this objective. By "Association" is meant the manner in which man should treat his fellow man in all relations with him. The socially efficient man would have truly attained this objective. Our present courses in civics, ethics, history, etc., aim at this outcome. By "Beauty" the committee means all the refining power of art in all its various forms. Proper appreciation of music, painting, sculpture, etc., certainly is meant, but beyond that an appreciation of the sense of beauty that comes with an understanding of the principles of any science. By the last objective, "Wealth," the committee did not mean riches, but what is connoted by the economic definition of the word. Plainly, man in his activities to secure a "living." Of course, all the real vocational courses aim at this objective. The committee agreed that these terms were open to criticism, but was unable to improve upon them.

Another committee working on this same problem recommended the adoption of the seven objectives as reported by the "Commission on the Reorganization of Secondary Education," which worked under the direction of the National Education Association. These objectives are: (1) Health, (2) Command of Fundamental Processes, (3) Worthy Home Membership, (4) Vocation, (5) Civic Education, (6) Worthy Use of Leisure, (7) Ethical Character. Mr. Sandwick's committee thinks that the second of these (command of the fundamental

processes) should be acquired in the elementary school before the pupil enters the high school. The same committee also pointed out that vocation is a means rather than an end and that the end is wealth and hence that is the objective. Also that "worthy home membership," "civic education" and "ethical character" are better expressed by the sociological term, "association." This committee also thought that "beauty" is a better expression for the last objective than the "worthy use of leisure."

The committee of which I am a member feels that fundamentally there is little difference in the two sets of objectives, and that it would make no difference which were approved.

Suppose then we assume that Mr. Sandwick's committee report is approved as a basis for the reorganization of our curriculum. Accordingly, then, our objectives are "Health," "Association," "Beauty" and "Wealth." These must be kept very clearly in mind. What is our next step? Will it be to arrange the present courses in groups and try to attain our objectives in such a manner? Not at all. Such a plan would not to any great extent improve our present situation. A more logical method must be attempted. However, this will be very difficult, as most of us are very slow to approve innovations.

There is no doubt but what Doctor W. W. Charters has done more than anyone else to point out the logical way to construct a curriculum. Two years ago, before this conference, he proposed seven rules to govern this problem. You will recall they are: (1) Study the life of man in its social setting and determine the ultimate objectives. (2) Analyze these objectives and continue the analysis until secondary objectives of workable size are obtained. (3) Arrange these in order of importance. (4) Raise to positions of higher order in this list those objectives which are high in value for children, but low in value for adults. (5) Determine the number of the most important objectives which can be handled in the time allotted to school education after deducting those which can be learned outside of school. (6) The best practice of the race in handling these objectives should be collected. (7) Arrange them in proper sequence according to the psychological nature of children.

By having agreed to adopt Mr. Sandwick's committee report on the ultimate objectives we have followed the first rule, and are ready to proceed with the second. Here we have to study to determine less remote objectives which can be more quickly attained. Let us consider for just a minute our present courses.

Many of the subjects now taught in the high schools are taught because many years ago in various ways they were pushed into the list of "studies" and have continued to be taught because of the inertia of tradition. Also much of the material cannot be justified by satisfactory reasons.

Suppose we briefly consider a single subject. Since this is the Physical Science Section, suppose we pick on chemistry. (We could just as easily take physics, physiography, algebra, or other subject.) Why is chemistry taught? One authority says it is an extension of one of the short six weeks courses, so popular in the last two decades of the XIX century. If that is true, certainly it was not introduced to realize a very clear cut objective. Again, how is the material that is presented in such a course selected? I note in the recent number of the High School manual sent out from this University an outline of the work that should be given in chemistry. I noticed that sixty-two topics were mentioned, some of which were required and some were optional. How were those topics selected? Was a method other than a method of opinions of either an individual or a group of individuals used? Was there a clear cut objective in mind when the topics were selected? Or did the committee select the topics because they constituted what in their opinion should be included in a course of high school chemistry?

The whole aim in this work of reorganizing is to get our objectives clearly in mind and then find by analysis what training is necessary to bring the pupils to a realization of those objectives.

It is quite clear that such organization will effect great changes. Perhaps some of the courses now taught would not be taught under the new plan. Certain it is, though, in the large as well as the smaller schools, there would be more instead of fewer science courses.

Probably in the smaller schools there would be few if any of the courses that aim at wealth as their objective. There would be little question but what it would be a satisfactory procedure to allow all pupils to take the subjects that develop the objectives of health, association and beauty. Of course, there would be some option according to peculiar abilities and traits of the pupils.

Just how the courses would be made in the furthering of the wealth aim would vary. Suppose it were required to organize a course to provide chemists. The actions, habits, etc., of a chemist would be studied while the chemist was at actual work and records made of the actual knowledge needed. Then the curriculum would systematically organize these facts and skills, in a course so that the pupil could acquire them in the most efficient manner. Do you think the ordinary chemist could answer one-third of the questions or solve one-third of the problems in the usual high school text book in chemistry?

The emphasis must be completely changed. Instead of trying to make our curriculum out of the various subjects as now presented in existing text books, we must first determine what facts and skills are desirable and then arrange them in courses. These courses would be divided quite differently than now. Probably instead of physiology, botany, zoology, etc., we would have science courses designated as Science I., Science II., etc., these courses logically giving the instruction necessary to bring about the objectives of health, association and beauty. Such courses would no doubt be required of all pupils. Then the advanced science courses would be quite largely differentiated into subjects that have different objectives. One would lead to pharmacy, another to auto mechanics, etc. Of course all the latter subjects would be elective. As stated before, such a plan if carried out would greatly increase the number of science courses in the secondary school.

Personally I have always looked with a good deal of doubt on innovations, but as I have studied Dr. Hollister's far reaching plan, I am convinced that it is the right and reasonable procedure. It does, without question, involve an almost endless task, but if better results are to result the work will be pleasure. If I may, I would suggest that this physical science section give the plan its careful consideration and if possible appoint a committee to confer with Dr. Hollister on further means of carrying out the reorganization.

The Bearing of Recent Research on the Teaching of Elementary Physics

Professor Henry Crew, Northwestern University

1. In the eulogy which Arago pronounced before the French Academy upon James Watt, the eminent Scottish engineer, he says that "clearness in public speakers is politeness." And since I heartily concur in this characteristic French precept and believe that definitions are very clarifying, I propose, first of all, to define the term "elementary physics," as I shall use it, namely, a presentation of the fundamental facts, principles and method of that group of sciences which deals with the transformations of energy and matter. But this, of course, might well cover the entire field of physics and chemistry, pure and applied, mathematical and experimental. Let us then use the adjective "elementary" to delimit the subject still further and say that we shall discuss the teaching of physics only,

excluding chemical phenomena (which generally involve change of composition), and including only so much ground as is ordinarily covered in a high school course or in a first year course in college; in other words, a brief but wide study of mechanics, sound, heat, light, electricity and magnetism.

2. In addition to this definition I will assume that we are all agreed that each student who goes through a course of elementary physics—whatever may be the peculiar views of the instructor—should come out with a fair grasp of, and a working knowledge of, those general principles and phenomena which have been found to control the operations of the physical world. Merely to interest the young man is not enough, merely to dazzle him with brilliant experiments or to have him talk glibly about recent research or to be familiar with recent research—none of these is enough if he has not grasped the fundamental ideas of Newton, the energy principle, the concepts of temperature and potential, the properties of waves, and some of the other fundamentals.

3. If we are agreed on this limitation, perhaps we can also agree further that, if the teaching of elementary physics is *not* affected by modern research, it is absolutely unique as the one subject *not* so affected. A few years back research was prosecuted by the gifted few, working either in their own private laboratories, as did Joule and Huggins, and the late Lord Rayleigh, or in academic laboratories as did Helmholtz, Maxwell and Rowland. I am not unmindful of such exceptions as Faraday and Lavoisier working in public or semi-public institutions—but they are truly exceptional.

Nowadays, however, "everybody's doing it"; the government, the large corporation, the manufacturer, the instrument maker, the teacher who is looking for academic promotion—all with a deliberate purpose; and, in addition, the man who is engaged in research because he can't help it, the man to whom nothing else is half so interesting, the man who considers the discovery of a single simple fact the most worth while thing he can do.

This deluge of results has brought about a new attitude of mind in nearly every class—the buyer is even uncertain as to how large a stock he may lay in, remembering the rapidity with which processes change; the maker is not certain as to how large a stock he should produce in view of certain improvements reported from his research department. Your doctor takes you into his confidence and tells you that this new medicine has not yet been tried in a sufficiently large number of cases for him to give you an accurate percentage of cures and failures; a motor car two years old is out of date; when you reprimand your son for visiting with the girls till one o'clock in the morning, he calls you a "fossil"; when you upraid him for his discourtesy, he informs you that your system of ethics is outworn and that he and "all the other boys" are travelling according to new and recently discovered rules of the road.

So I say a science of physics that had not been touched by research would be what these same boys politely denominate "stone age stuff." But is there any such physics? There may be. I can only say I have not seen it.

4. Did you ever stop to think that the time was when it could be said concerning any phenomenon in physics—even the simplest—that its explanation is a matter of recent research? The invention of the chariot wheel, the production of fire, the detection of the motion of the planets among the stars must each, at some prehistoric period, have been a recent discovery of compelling interest. Time was, of course, when men did not know how far a floating vessel, say a Greek vase, would sink in the water; but some two centuries B. C. this was a matter of recent research, when Archimedes proved that in order to determine how far a trireme will settle into the water when launched you have merely to compute the depth of a body of water which has the same external shape and weight as the hull of the trireme. Time was when men did not know how vision was accomplished by the human eye. In the seventeenth century—as late as the time of Kepler—it was a matter of recent research that the retina is the screen

upon which the crystalline lens produces an optical image. Some time between the period of Chaucer and Milton, it was a recent discovery, made by Benedetti, that the proper measure of torque is the product of the force by the perpendicular distance from the axis to the force; the bent lever was then clearly explained. Cannon were brought into the field by the English for the first time at the battle of Crecy in 1346. But it was more than a couple of centuries later that Galileo first showed how to compute a trajectory; and this was made possible only by one of his recent researches, namely, the discovery of the laws of bodies falling freely at the surface of the earth; and this a half century later made it possible for Newton to test the behavior of the moon and discover whether it falls toward the earth according to same laws as a cannon ball.

The agreement was poor—but a recent research by Picard and others on the size of the earth, enabled Newton to correct his results and prove the inverse square law to the satisfaction of everyone.

It was about this same time (1669) that the explanation of the pull on the string which a boy experiences when he is whirling a body about his head was first explained by Huygens. In this recent research he distinguishes for the first time between mass and weight—calling the former the “solid quality” (*solides quantitates*) of the body whirled. The term mass which Newton defines on the first page of the *Principia* is based directly upon the then recent research of Huygens.

Well, one might go on in this manner indefinitely, or at least until he had covered the entire field of physics.

5. I now come to my final thesis which is this: Since all of physics was at some time or other a matter of research, why not present it in this manner from the very start and avoid giving the young man the impression that physics is a closed chapter? Why not present these inspiring examples of men who, early and late, devoted their lives to research, and point out at the same time that it is but a short distance from where we now are in elementary physics to the borders of the unknown. From the junior laboratory to the front line trenches of research is but a stone's throw. There is no such thing as finality at any point in physics.

The simplest of experiments—such, for example, as that of weighing—when pushed to a little higher degree of accuracy becomes tremendously complicated. The late Lord Rayleigh is said to have once remarked that the most difficult experiment he ever undertook was the comparison of two weights, namely, the weight of oxygen in a certain glass bulb compared with the weight of hydrogen required to fill the same bulb under the same conditions of pressure and temperature.

So one finds it whenever he attempts to measure, with a little more than ordinary accuracy, a temperature, a wave length, a resistance, or any other physical quantity. In attempting to go a little farther, one almost instantly reaches the unknown.

For illustration, let us consider the gas law. Here one has only to go back to the civil wars of England to reach a time when practically nothing was known about how volumes vary with pressure. Robert Boyle is a most inspiring man to present to students. The extension of Boyle's law by Charles and Gay Lussac—to meet the case where the temperature of the gas is not constant; and the still further extension of this law by van der Waels* to cover the cooling effect studied by Joule and Thomson, as well as the more accurate measures of Amagat, bring one up to the recent attempts of Onnes and others, described in his splendid volume on the *Equation of State*—Vol. 11 of the *Leyden Communications*. One of the pending problems of physics today, if I am correctly informed, is the proper equation of state with which to describe the behavior of ammonia gas. The Linde device for making liquid air has added tremendously to the importance of the term a/V^2 for elementary physics. From another point

of view all these laws may be presented as a consequence of the kinetic theory of gases. Newton says: "If I have seen farther than Descartes, it is by standing on the shoulders of giants."

Let us consider another very trite topic—that of energy. In the days when Descartes and Leibnitz were disputing as to whether mv or mv^2 was the proper measure of energy (i. e., in the days before it was clear that force is the time-variation of one of these expressions and the space-variation of the other), this topic was indeed a very live one. But now that the equal merits of *momentum* and *vis viva* have been established, the best minds in science are not lying awake nights over the question. Indeed, it is only a few years ago, 1847, that we were set straight in this matter of energy. One of the men who was most prominent

* $(p - \frac{a}{v^2})(v - b) = RT$, where the symbols have their usual meaning.

in setting us straight was here in Illinois only a few years ago. I refer to Helmholtz.

On the other hand, many facts which, up to a certain date, have been of trifling importance have in the light of recent research assumed enormous importance. The residue left over in Cavendish's eudiometer tube when he had finished sparking the nitrogen and oxygen into nitric acid, was an important fact only in the sense that any fact is important especially when it is not understood; but it acquired additional importance on the discovery of argon. The current which Edison got from his two-electrode vacuum tube (as we now call it) was for a long while a fact of minor importance. No one would so estimate it at present. The discrepancy between the density of nitrogen taken from the atmosphere and nitrogen artificially prepared was a matter of small importance until the accuracy of weighing had been pushed to the point where the difference for these two nitrogens was greater than the error of weighing. The upshot of the whole matter is that in order to evaluate the importance of physical facts one must more or less—the more the better—keep abreast of modern investigation.

It is equally important to keep in touch with recent laboratory devices. In the days when Sir Humphry Davy and Faraday and Joseph Henry were covering their wire by hand, wire covered by machinery would have been a distinct blessing—even more than our enameled wire is to-day. My memory of the first portable ammeter I ever saw is still very distinct—it was in 1884—when "webers" had just been converted into "amperes." "Graded galvanometers," as such instruments were then called, were matters of recent research. And when one considers the laborious processes of current measurement which they replaced he realizes that it was a matter of some importance for every teacher of physics, in those days, to be *en rapport* with recent research.

6. ———, said the Greeks—the first great thinkers of Europe: *ne quid nimis*, the Romans said—which being interpreted means, *not too much of anything*: in other words, it is easy, in our teaching, to run even research into the ground. How shall we draw the line? *My criterion is this: Use anything from any source that will help to make clear the fundamental principle which you are demonstrating. But don't drag anything in merely because it is new.*

Nothing gives a healthful student more pleasure than to get a clear grasp of something which has hitherto been hazy to him. If, therefore, one's topic is fundamental and is clearly put, he need not worry about "interest." A student is always "interested" in that upon which he grows. But above all, avoid giving him the impression that physics is a completed volume—a finality. A concrete illustration will make my meaning clearer. A few years ago Professor Porter of the University College, London, showed that in lagging a steam-pipe or a wire conveying an electric current, one may, even while using a poor thermal conductor for his lagging material, produce a cooling effect. A platinum wire

with glass beads fused on it here and there will, when heated white-hot by means of an electric current, remain perfectly black and relatively cool under the glass. If the lagging be made thicker and thicker a critical value will finally be reached where no cooling will take place. In elementary physics it will be impossible to differentiate the expression for the heating effect and find just when it changes sign; but it requires only a moment to demonstrate the fact, to arouse the student's curiosity and to give him the proper impression, viz., that the lagging of a steam-pipe is a question well worth looking into. Here it will be seen *a part* of the research, but not all of it, can be employed in elementary physics. The same can be said of some of the properties of radioactive substances. Every student should see radium break down the insulation of air. On the other hand, there are certain things one can safely avoid. I would mention, as examples of such, the quantum hypothesis in its present state, the relativity theory in its present state, all gravitational theories in their present state, and most atomic models in their present state. To present physics in this manner will demand all the good judgment, all the knowledge, all the energy, and all the courage one can summon. In the midst of our abundant riches—our embarrassment of riches—in physics, I want to leave with you two words of advice, which I once received from a surgeon in Italy—a doctor who was mending an injured shoulder. My right arm was hanging limp and helpless at my side. I never expected to play another game of golf as long as I lived. His parting words were “Adagio! Coraggio!” When memory fails me one of the last scenes I shall ever forget will be this white-haired surgeon, of Turin, firing at me that volley of rich vowels, saying “Go slow, but never lose your courage!” These two words I have found useful in every walk of life. I trust you may find them so in the teaching of elementary physics.

How Our Teaching Should Be Modified to Agree with Recent Developments in Chemistry

B. S. Hopkins, University

The teaching of elementary chemistry has always been a difficult task because of the inherent complexity of the subject. It matters little where we begin our study or what method of attack is selected, complications are soon encountered from the natural interdependence of the principles and phenomena studied. As a consequence of the involved nature of the subject no student can be expected to master all of the material presented in a textbook by a single journey thru its pages. In fact it is perhaps the usual thing to find that the teacher of chemistry is adding constantly to his own fund of knowledge thru discussions and varied viewpoints, even tho he may teach many generations of students from the same book.

Within recent years this natural difficulty in teaching chemistry has been greatly increased by the fact that certain scientific discoveries have made it necessary to revise some of our most fundamental conceptions of the science. These new developments have resulted mainly from various studies of radioactivity and the behavior of matter under greatly diminished pressure. As a result of these changes in our fundamental theories, new complications have been introduced, and for the most part these new notions are exceedingly bewildering to the beginner. It is no wonder, then, that the teacher of chemistry is at a loss to know just how much of this “new chemistry” he should include in his teaching. For well he knows that if he attempts to include all the newly discovered facts he may produce utter confusion in the minds of his pupils. On the other hand if these new conceptions are ignored he is not keeping abreast of the times in this rapidly developing subject and he may soon discover that he has been left hopelessly behind.

The purpose of the present paper is to suggest one method by which some of these difficulties may be overcome. There are many other ways of overcoming these obstacles and the suggestions here given may not be the best, but it is hoped that in the discussion which follows, others will freely speak of their own experiences in order that we may all mutually profit by a comparison of methods.

Many elementary textbooks attempt to develop in the mind of the beginner a difference between chemistry and physics by establishing a distinction between a chemical change and a physical change. It is doubtful if such a procedure is ideal. For in most cases as an example of a physical change is given the melting of ice and the condensation of steam. In later years the student is assured that the latter phenomenon is pretty certainly a case of polymerization which may, at least in part, be represented by the equation $3\text{H}_2\text{O} = (\text{H}_2\text{O})_3$. When the student compares this reaction with the one representing the polymerization of acetylene, a phenomenon which is most certainly chemical in its nature, he finds a similar equation applies: $3\text{C}_2\text{H}_2 = (\text{C}_2\text{H}_2)_3$.

Grave doubt arises, if the student is asked to believe that one represents a physical change and the other a chemical change. If it is necessary to distinguish between physics and chemistry, it may be done much more certainly by considering the former as dealing with energy and its changes while the latter has to do with changes in the composition of matter.

The chemistry textbook of a quarter of a century ago gave many definitions, but there seems to be a well-defined tendency among present day authors to avoid set definitions of chemical fundamentals. This tendency is probably due to two reasons: (1) it is very difficult to formulate a definition which is brief, clear, comprehensible and at the same time true to scientific fact; (2) beginning students are especially given to memorizing the words of a definition and are frequently able to repeat the words perfectly while they do not have the slightest conception of the meaning of the sentences. To avoid these difficulties many of the recent authors discuss the fundamental conceptions of chemistry, give illustrations, but leave to the student the construction of the definitions. This process requires thought, understanding and a command of English which may be considered "education" in the true sense of the term. When any concept in chemistry is discussed as fully as circumstances permit, it is possible to convey a much more accurate idea concerning it than if we rely on a brief definition. Consequently, I believe, that one of the most useful plans for teaching modern chemistry is to avoid as far as possible set definitions and to insist on explanations in the student's own words, with illustrations to make sure that the meaning is clear.

As an illustration of the difficulty of giving definitions, let me read from the Third Edition of A. W. Stewart's "Recent Advances in Physical and Inorganic Chemistry, p. 240:

"The following definition of an element appears to cover practically all the ground: An element is a form of matter which has (1) a definite atomic weight; (2) a definite spectrum; (3) a definite valence or electrical charge; (4) a definite series of chemical properties; (5) a resistance to any ordinary chemical reaction such that no decomposition of the material into anything simpler is possible; and (6) in certain cases, a definite series of radioactive properties. If any form of matter agrees with all these criteria, we are justified in assuming that it is chemically elemental in character."

Most of us will agree that this definition is conservative, comprehensive and as satisfactory as it is possible to formulate. Yet if we examine it closely we find some distinct opportunities for criticism. The recent work of Harkins, in Chicago, and Aston in England, shows pretty conclusively that chlorine, for instance, does not have a definite atomic weight but it is a mixture of two

isotopes of atomic weights 35 and 37. Judged by this definition iron is not an element because in place of having "a definite spectrum and a definite valence or electrical charge," it has two distinct valences whose solutions, known as ferrous and ferric, have different spectra and very different chemical properties, one resembling magnesium, the other suggesting aluminum. By this same definition nitrogen is not an element because the recent work of Rutherford seems to indicate that when nitrogen is bombarded by alpha particles its molecules yield hydrogen.

A definition of this sort would not only fail to help the beginner to grasp the meaning of the term element, but it would certainly produce confusion and uncertainty of mind.

In the presentation of a complicated conception it is doubtful if an attempt should be made to develop the entire idea at one time. The first mention of a fact may be made as simple as possible, then later additions may be made to this idea and perhaps after several references have been made in cycle form the full theory may be developed. To illustrate by the use of the conception of oxidation. While the student is studying oxygen he learns that oxygen unites with phosphorus and that this important process is an example of oxidation. Later when chlorine is studied he learns that phosphorus burns in chlorine as readily as it does in oxygen and that the two phenomena are of the same general nature. Hence, the union of phosphorus and chlorine is also oxidation, tho no oxygen is involved. Still later other phenomena are encountered which give a still broader view of oxidation and finally the student is ready for the general statement that any raise in valence is oxidation. If objection is raised to this method of treatment because the instruction is fragmentary and always more or less uncertain, a word from the instructor will relieve this situation. When the subject is first introduced the student may be warned that there will be additions made to the statement later; on the second mention of the subject the teacher may recall the first conception and prepare the student mind for still later additions, while at the last recurrence of the topic the whole matter may be reviewed thoroughly for the final impression which is desired.

In like manner the difficulty with the conception of the element may be settled. If it is impossible to frame a definition of the term element which will be both simple and scientifically accurate, it seems much more satisfactory to use the old simple conception, with the addition that the tho is not complete. Then when radio-activity and sub-atomic phenomena are studied it is possible to modify the original conception as much as may be required.

Until quite recent times the atom was generally considered as an extremely small particle of matter compact in form, spherical in shape, homogeneous in character, unchangeable, indivisible, and indestructible. There were as many kinds of atoms as there were members of the list of elements and an atom of one element had little in common with atoms of the other elements. How completely these simple ideals have been overthrown! In place of this ultimate unit of matter we are now forced to believe that atoms resemble miniature solar systems, each one made up of a positive nucleus about which the electrons rotate in orderly fashion, following definite orbits. If the atom is magnified until it is a mile in diameter the electrons would be about as big as baseballs, while the nucleus would be as large as a pinhead. Yet this pinhead would contain over 99% of the total weight of the atom. So an atom is not a compact unit of matter but mostly empty space! We are, also, lead to believe that the electrons are alike in all atoms, that an electron may easily be detached from one atom and add itself to some other atom which may differ fundamentally from the mother atom. The arrangement of the electrons in the members of the zero group is so stable that no method has yet been discovered by which an electron may be removed or added. On the other hand the atoms of the radioactive elements are so unstable that they are continually shooting themselves to pieces, giving off relatively large groups of electrons

which are recognizable as being identical with other atomic arrangements. To ask a beginner in the study of chemistry to grasp this complicated conception of the unit of matter would, in my humble opinion, be a most tremendous blunder. I believe it would be far better at first to give him the old original idea of the simple unchanging atom, with the thought that at some later time we might be able to break open this shell which seems to be solid, and examine its structure, behavior and relationships. I do not believe that we expose our teaching to the charge of being unscientific if we develop a complicated conception in this manner. For we are simply following the natural course of mental development, since in these easy steps the human mind has advanced from the simplest conceptions of the ultimate nature of matter to our present complicated theories.

Until a few years ago a crystal of common salt was considered as an orderly arrangement of molecules, each one of which contained a certain atom of sodium and a definite atom of chlorine. Recent work has shown that while a given crystal of sodium chloride undoubtedly contains the same number of sodium atoms and chlorine atoms, no one sodium atom can claim any particular chlorine atom as its own companion. Each sodium atom is to be thought of as surrounded with chlorine atoms and each chlorine atom is surrounded by sodium atoms, but there is no tendency toward arrangement in pairs. In spite of this fact, I believe the beginner should be taught that a molecule of salt is composed of an atom of sodium and an atom of chlorine. In later years when the student learns from his study of physical chemistry that this is not the whole story, he will realize that the original statement is not a scientific untruth but an attempt to develop by easy steps a conception which is difficult for the advanced student and next to impossible for the beginner.

There are many important conceptions in modern chemistry which I do not believe the beginner should be taught at all. The structure of atoms, the electrical theory of valence, the existence of isotopes and isobares, the quantum theory and others of this nature do not appeal as essential to a fundamental course in chemistry. If this is true, then these topics should not be introduced by the authors of textbooks or the teachers of chemistry. But what shall be done with the matter if the student himself raises the question? Suppose, for example, in the discussion of the term element the statement is made that an element cannot be decomposed into simpler forms of matter nor synthesized from other things. One thoughtful student has been reading in his science paper that radium, an element, decomposes into helium and nitron. He promptly raises the questions: Why is radium considered an element if it is decomposed? Why is it not regarded as a compound of helium and nitron? Such questions as these should be answered frankly, in as simple language as possible and with the best scientific information available. If I were asked such a question by one of my own students I would say that while radium does disintegrate it is regarded as an element because (1) it has a definite spectrum, (2) it behaves like an element in that it conforms to the laws of definite proportions and multiple proportions, (3) the change is not to be considered as a case of decomposition in the ordinary sense because the rate of change is not affected by the highest temperature or the greatest cold (4) the energy liberated is vastly greater than is obtained from any known chemical reaction and this change is accompanied by the emission of charged particles which is not common to chemical changes. Hence, this change is not the same as an ordinary chemical decomposition but is to be considered as taking place within the atom itself.

There is perhaps one grave danger in this method of teaching our complicated theories and that is that we may be accused of teaching half truths. I do not believe this trouble will become serious if the teacher takes pains to teach chemistry as a live subject which is growing rapidly as the weeks pass. Students are prone to accept the word of their teacher or their textbook as final and it is difficult to convince them that the subject is constantly under-

going rapid development. One of the best ways to get a student of elementary chemistry to realize that the subject is advancing is to refer frequently to what may be expected from a further study of the subject. So if the teacher introduces a conception in a simple form with the warning that more may be expected later, there is little danger that the student will feel that he is being taught part truths or that his course is scientifically unsound.

How May Local Interest in Chemistry Be Increased?

C. E. Osborne, Oak Park

There is a local chemistry of vital interest which no textbook can give, which few teachers know and fewer teachers teach. Take advantage of this to interest your community in chemistry.

Having built up a chemistry department in a so-called classical and literary community from an enrollment of 7 to 160, a department that has grown five times as fast as the school, and in which we have almost as many pupils studying chemistry as all the other advanced sciences—including botany, zoology, physical geography and physics-combined. I may be pardoned for offering the following suggestions on how to increase the local interest in chemistry.

1. Lectures to pupils on "Some Interesting Chemical Experiments," "Soda Water," "The Air We Breathe," "The Water We Drink," "The Food We Eat," "The Clothes We Wear."
2. A series of practical experiments on "Tests for Food Constituents," "Water Analysis," "Milk Analysis," "Tests for Adulterants in Foods," "Soap Making," "Testing Cloth Fibers," followed by a written report on investigations made at home on foods, cloth and labels on canned goods, in place of the regular monthly tests.
3. A board of food inspectors who purchase foods in the local market and test them under my supervision and hand me written certified reports of their findings.
4. Lectures before boys' clubs, men's clubs and women's clubs on timely topics, such as "Adulterants in Foods and Simple Kitchen Methods for Their Detection," and lectures before student bodies on such subjects as "Science and Warfare," "How Chemistry Helped to Win the War."
5. Articles in the local papers on "Our Local Food and Milk Supply."
6. An annual chemistry exhibit or open house.
7. Visits to a model bakery, a model dairy and a modern ice plant.
8. Large display cards on the laboratory walls with such inscriptions as the following:

The chemistry pupil is not so easily duped by fake "dopes" and fake "docs."

The chemist has run the food fakir to earth.

A knowledge of chemistry is an aid to good health.

By applying chemistry Rockefeller saw millions in crude petroleum oil.

Soap that makes the whole world clean contributed by chemistry. Baking powder, the leaven of civilization, a product of chemistry. Millions saved annually because chemistry gave us the fire-extinguisher.

Disinfectants to stop the spread of contagious diseases and anaesthetics to make possible the most delicate and difficult operations, produced by chemistry.

Every tint of the rainbow for dyeing fabrics and clothing, given us at little cost by chemistry.

This splendid building is possible because of chemistry. It has contributed the concrete in the foundations and walls, the brick, cement and iron lath, the tile of the roof, the copper drains and downspouts, the steel beams and girders, the glass for the windows, the mosaic tiling for the floors, the iron and brass bolts and screws, hinges, locks, electrical fixtures, tinting for the walls, paint for the woodwork and the heat that makes it comfortable.

9. A bulletin board on which are posted photographs of noted living scientists, articles taken from magazines and newspapers, jokes, cartoons—almost anything pertaining to chemistry or the value of an education. This is not only chemistry up-to-date but chemistry up-to-the-minute.
10. A serious attempt to show the applications of each day's lesson to industry and every-day life—a serious attempt to vitalize chemistry.

To put new life into old chemistry you must not only know chemistry and love to teach chemistry, but you must also live your chemistry. The pupil will catch your enthusiasm and will realize that it is a privilege to know, that it is a wonderful world in which he lives; that the world was not built by chance. He will understand the world better and will therefore be the better fitted to live in it; his mind will be on things worth while, and to him finding out will be fun and work will be living.

But I have been asked to tell you especially about our chemistry exhibit or open house. Through public lectures, newspaper articles and the pupils I had succeeded in taking the chemistry department to the parents, but I wished further to bring the parents to the chemistry department that they might have a more definite and intimate knowledge of it and therefore take a more personal interest in it.

The English department caught the attention of the community through the annual public class play, the musical department through the annual opera, the athletic department through football, but the attention of the public was never definitely directed toward other departments.

I suggested that indoor athletics, manual training, household arts, the art department and all the sciences unite in a public exhibit or keep open house. I knew that the parents would come for one if not for the other, and while we had them there we knew they would look in on the chemistry department, and we prepared to have something for them to look at when they looked.

Between 500 and 1000 people were present at our first exhibit and the next year saw an unusual increase in the number of pupils enrolled in the chemistry department. The exhibit has been repeated several years with the same marked success.

As soon as one exhibit is over I begin to think of and plan for the next. To succeed with anything it must be uppermost in one's mind. If, when you get an idea, you put it down on paper and carry that paper with you so that it is always at your finger's end, you will have plenty of material when the time comes.

It is best to give the exhibit toward the end of the school year when the pupils are more skilled in laboratory work and have a better working knowledge of chemistry.

The experiments are taken largely from the regular work, but enlarged, perfected and made practical. Special effort is made to introduce things of local interest.

Just before one of our exhibits it was reported that at a banquet at the University of Chicago some one had put arsenic in the soup and most of the guests were poisoned. One of my pupils made some soup, put arsenic in it, tested it for it and found it. At the exhibit he showed and explained his results, but I did not let him make the experiment in the presence of the guests because of the danger involved.

Testing cigarets for nicotine and the papers for arsenic and arranging an apparatus to smoke the cigaret are always of great interest to the boys, and this demonstration does more good than a lecture on cigaret smoking.

It is better to develop some definite subject.

At our last exhibit the subject was "Some Applications of Chemistry to the War." I chose this because it was uppermost in people's minds. "Practical Applications of Chemistry," "Some Applications of Chemistry to Industry," "Some Interesting Chemical Experiments," "Chemistry in the Home," are topics we have had.

I begin to talk to the pupils about this at least one month before the date of the exhibit and post a suggested program on the board. I ask them to add anything they think would be good and, if approved by me, I let it go on the program. There are always some interesting and valuable suggestions.

One boy suggested an exhibit on bacteria, as he expected to be a physician. He gave a most interesting and commendable demonstration of bacteria responsible for contagious diseases and handled the microscope with unusual skill in preparing slides for the guests.

A girl suggested an exhibit on the composition of man in which we should have bottles containing samples of the elements in man and the exact amount in the average body of 150 pounds in weight. This proved to be very interesting and instructive.

Another pupil designed and constructed a large, original and successful working model of Hiero's fountain. It ran for two hours or more and with a jet at least two feet high and could be varied at will.

Another prepared a case of radiographs and photomicrographs. He made a cabinet for them electrically lighted and placed it permanently on the laboratory wall. One day when a boy fell and broke his wrist this boy made an X-Ray plate of it for the doctor which distinctly located the fracture.

Another was testing a sample of vinegar to find the percent of acetic acid when suddenly he gave a scream. He had taken his burette where there was a good light to get an accurate reading when he discovered that it was alive. There were millions in it! We soon had them under the microscope and then we used the projection lantern to throw them on the screen. You can imagine the excitement. He had discovered the vinegar eel.

I ask those who are willing to be responsible for certain topics to write their name after it, and I always have more volunteers than I have room to allow to take part.

This gets the pupil to do the thing in which he or she is interested and they gladly read and spend extra time on their topic. Of course, they must talk it over with me and be sure that their experiment is a success or it cannot go on the program.

On a separate sheet of paper for each I write all the questions which I can think of that any visitor might ask them, and they must be certain that they can answer these questions.

A card explaining what the pupil is doing is tacked at the top of his desk. A printed program and a hygrometer calendar is handed to each visitor as he arrives.

This exhibit is given at night.

The following points about the exhibit should be emphasized:

1. More than five hundred persons came to the exhibit where not more than four or five visit the regular recitation and laboratory work during the year.
2. It is interesting to the teacher as well as the pupil, and I learn more from it than the pupil. It helps to keep one out of the rut.
3. It gives a number of boys and girls an opportunity to show their ability who do not ordinarily take part in public affairs or athletics.
4. It acquaints the community with the splendid equipment and facilities of the chemistry department.
5. It impresses the public with the practical value of chemistry.
6. The pupils take pride and pleasure in doing and explaining these things and a new and practical interest in chemistry is awakened.
7. Parents and teacher meet under most favorable conditions.
8. It increases the enrollment materially.
9. The best things that have ever been said in the public press about me and my work have been said by those who visited this exhibit. The value of such unsolicited praise in its influence on the community is immeasurable.

Of course this is advertising, but it certainly is legitimate and it gets results.

CHEMISTRY EXHIBIT 1915

This is an attempt to give you an idea of the work done and a demonstration of how it is done.

Lecture Room

1. The list of experiments recorded in the top row to the right as you enter shows the list of experiments made by each pupil during the year. (Each pupil makes eighty experiments and analyzes twenty unknowns.)
2. Below the experiment records are reports on investigations made at home, including the interpretation of labels on canned, packages and bottled goods and the testing of cloth fibers, etc.
3. Above the north blackboard are colored charts showing the relative amounts of food value in the most common foods.
4. The analysis of milk collected from Oak Park wagons.

This analysis is in charge of Kent Early, assisted by Robert Helme and Brice Barber.

Laboratory

Pupils are working as they do in regular laboratory work. Each experiment presented tonight has been made by every pupil.

1. Making nitric acid.
2. Testing candies.
3. Testing vinegar.
4. Analyzing water.
5. Testing extracts, coffee, butter.
6. Weighing a hair.
7. Making hydrogen—a constituent of water.
8. Making oxygen—the other constituent of water.
9. Testing foods for food value.
10. A study of bases.
11. Making soap.

12. Making ammonia.
13. Making bromine.
14. Testing cloth fiber.
15. Finding the per cent of wool in a piece of cloth.
16. The distillation of wood and coal.
17. Analyzing unknowns.
18. Making carbon dioxide, the gas in soda water.
19. A study of hard waters.
20. Making hydrochloric acid.
21. Distilling water.
22. Analyzing tooth powders.
23. Testing sausage, hamburger, dried apricots, peaches, apples, and pears.
24. A study of saturated solutions.

The Hiero fountain was designed by Fleetwood Albright and constructed by Fleetwood Albright and Kenneth Birkin.

The siphon fountain was also constructed by Birkin and Albright.

The exhibit on "The Composition of Man" was prepared by Elizabeth Fuller.

The microphotographs and radiographs and the exhibition case in which they are displayed is an original piece of work by Harvey Morrow.

CHEMISTRY DEPARTMENT 1916

This is an attempt to give you an idea of the work done and how it is done.

Lecture Room

1. The records in the top row to the right as you enter the room show the list of experiments made by each pupil during the year. (Each pupil makes eighty experiments.)
2. Below the experiment records are reports on investigations made at home, including tests for adulterants in foods, the interpretation of labels on canned and package goods, the testing of cloth fibers, etc.
3. The analysis of milk from Oak Park dairies is made by Walter Blount and Marshall Wilson.
4. Fire extinguishers are demonstrated by Gordon Hurst and Chauncey Grainger.

Laboratory

1. Arsenic in cigaret papers and nicotine in the tobacco.
2. An inexpensive, automatic still.
3. Alcohol in patent medicines.
4. Can you hard boil eggs and cook potatoes on Pike's Peak?
5. Convection current in water when heated.
6. The manufacture of illuminating gas.
7. To compare the quantities of gas given off by different brands of baking powder.
8. Methods of extracting oils.
9. Making corn syrup from starch.
10. Making and distilling alcohol. The yeast plant.
11. Various ways to dye cloth.
12. Making library paste.
13. Photography.
14. How we know the composition of the sun.
15. Crystals.
16. Writing with electricity.
17. Testing cotton, silk, wool and linen.

18. Making soap.
19. Separating water into hydrogen and oxygen.
20. Chlorine, the gas used in gas bombs.
21. The ammonia fountain.
22. As the microscope sees it.
23. An acetylene gas plant.
24. Etching designs on glass.
25. Glass blowing.
26. Silver and copper plating.
27. What makes them go?
28. Some simple interesting experiments.

A sample of radium may be viewed through the spinthariscopes in the dark-room.

CHEMISTRY DEPARTMENT 1917

This is an attempt to give you an idea of the work done and a demonstration of how it is done.

Lecture Room

1. The list of experiment records in the top row to the right as you enter shows the list of experiments made by each pupil during the year. (Each pupil makes eighty experiments and analyzes twenty unknowns.)
2. Below the experiment records are reports on investigations made at home, including the interpretations of labels on canned goods, package and bottle goods and the testing of cloth fibers, etc.
3. Above the north board are colored food charts showing the relative amounts of food value in the most common foods.
4. The manufacture of illuminating gas from soft coal demonstrated by Arthur Jones and George Madill.

Laboratory

Pupils are working as they do in regular laboratory work.

1. Detecting arsenic in soup.
2. Acetylene gas.
3. Nicotine in cigarets.
4. Phosphorus from match heads.
5. Silver plating.
6. Alcohol in patent medicines.
7. Testing candies.
8. Testing Vinegar.
9. Analyzing water.
10. Testing extracts, coffee, butter, etc.
11. Making hydrogen, a constituent of water.
12. Making oxygen, the other constituent of water.
13. Testing foods for food value.
14. Making Soap.
15. Ammonia, the cleaning agent.
16. Bromine, for gas bombs.
17. Chlorine, for gas bombs.
18. Testing cloth fiber.
19. Carbon dioxide, the gas in bread and soda water.
20. Hydrochloric acid, the acid in the stomach.
21. Distilling water.
22. Testing hamburger, dried peaches, pears, apples, etc., for sulphur compounds.

23. Neutralizing an acid by a base.

24. Radium.

A demonstration of photographic work by Charles Hudson and Thomas Hildebrand.

Some studies of bacteria by George Wantz.

An exhibit of the composition of man.

CHEMISTRY EXHIBIT, MARCH 14, 1919

Theme: Some Applications of Chemistry to the War.

Recitation Room

Here will be found many souvenirs and trophies of the War which the young people will be glad to show and explain to you.

Laboratory

The pupils will demonstrate the following and will be pleased to answer your questions.

1. Signal lights, smoke screens, star shells.....James Quigley
2. Oxygen for the pulmotor, oxygen helmet and oxy-welding.....Arthur Matthews
3. Hydrogen for balloons and oxy-hydrogen blow torch.....Genevieve Hipp
4. Filling toy balloons with hydrogen.....Douglas Gordon
5. Matches used 100 years ago.....Laurence Mills
6. The Electrolysis of salt (lye, chlorine and hydrogen).....Willard Vaughn
7. Chlorine for gas warfare, bleaching, and for purifying water.....Thomas Empey
8. Soapmaking (glycerine for nitro-glycerine).....Roy Farwell
9. Bromine for gas warfare.....Miles Stybr
10. Nitric acid for nitro-glycerine, dynamite and smokeless powder and
T. N. T.Lawton Tabor
11. Sulphuric acid for nitro-glycerine, dynamite and smokeless powder
.....David Johnson
12. GunpowderEarl Larsen
13. Ammonia for nitric acid and as refrigerant.....Munson Emery
14. Saltpeter for gun powder and fertilizer.....Ormand Lyman
15. Iodine to reduce swellings, antiseptic in operations.....Marion Hall
16. Ether as anaesthetic in surgical operations.....Lester Lloyd
17. Chloroform, anaesthetic in surgeryHoward Root
18. Fulminate of mercury to discharge explosives.....Frederick Hart
19. What the boys had to drink in France.....Gerry Bates
20. The composition of manWilliam Cary
21. Fire extinguishers, dry, wet, pyrene.....Arthur Lomas
22. Sensitive ink used by spies and for telling fortunes.....Florence Shafer
23. PhotographyJohn Huff
24. The electrolysis of water, hydrogen for balloons, oxygen for helmets
and weldingJohn Phillips
25. Testing Vinegar, vinegar eelsRuth Macauley
26. Testing cloth, cotton, silk, wool, linen.....Gladys Watts
27. Silver platingKathryn Ratcliff
28. Radium for radiolite watches (dark room).....Norris Gathercoal

How Can the Chemistry Class Serve the Community?

C. M. Wirick, Crane Junior College, Chicago

It can't! In the common meaning of the terms, experts, specialists, are needed for that and they can't be made out of high school girls and boys. And these are spoiled for our work before they reach us, having no interest in anything unless it is the last best-seller or the movies.

The young child is interested in everything. All his senses respond to every stimulus and if the contact does not come without his help he goes out on exploring trips. He looks at, feels, tastes. He is interested and learns at an astonishing rate. And this is true of all of them. What becomes of all these bright children? I suppose some of us were bright when we were babies. Is it because as soon as they get into school they put in their time studying printed characters, memorizing printed characters, reading printed characters and reasoning by them? Possibly. How can they be brought back to a normal use of their senses?

By putting them into actual contact with things about, above and under them,—in a word, by the study of objects, nature, using books only as helps.

What is best worth knowing is what is nearest to hand. If we accept that then what we need most should come first. We need air fifteen to twenty times per minute as long as we live. Begin with it. Water, needed every few hours, comes next. Then food which we think we need at least three times per day. Clothing and shelter come next and these mean plants and animals and their preparation to serve us, and that means soil and fertilizer. A single grain of wheat, if we may believe the analysts, contains calcium, carbon, chlorine, fluorine, hydrogen, iodine, iron, magnesium, manganese, nitrogen, oxygen, phosphorus, potassium, silicon, sodium and sulphur. If to these and their compounds we add aluminum, copper, lead, mercury, silver, tin and zinc, we shall have all the elements we need consider in a first year course in chemistry and manganese can be omitted with small loss except as an addition to some steels.

Studying the atmosphere we must discuss its extent, composition and properties. How the lower layers, because of their movements, give us climate and weather by evaporation, transportation and condensation of water, humidity and health, ventilation, dust and micro-organisms, disease, antiseptics and canned goods. Its solubility in water and the aquatic life depending on this, carbon dioxide in air and water, transpiration, giving us all plant products, and respiration supporting all animals. Because of the moist mucous membrane of the lungs we are as much water-breathers as fishes and our blood is sea-water in which swim countless millions of submarines, corpuscles, carrying cargoes of oxygen outwards, unloading where needed and returning with carbon dioxide to be discharged. The atmosphere must have been much richer in carbon dioxide formerly as otherwise graphite and various sulphides would have been oxidized. Until plants had reduced the carbon dioxide, liberated oxygen, animals could not exist. When they came the interchange of these two gases gradually established equilibrium and this condition of symbiosis still exists. The atmosphere is for us the medium through which we receive the energy of the sun and it serves as a blanket to retain the heat that passes through it. By it we have light, sight, color, and, by means of lenses, it opens up for our study the new worlds revealed by the telescope, microscope, spectroscope, ultra-microscope, to say nothing of the camera and spectacles. Sound comes to us and music and noise-forms of energy that we can't use and all noise is *wasted* energy.

We cannot study the air without discussing air-like bodies, that is gases, and must consider the kinetic molecular hypothesis and diffusion of which every odor will remind our students. Finally, windmills, sails, balloons and flying machines have had much to do with our progress up from (or to?) savagery.

Water. The Hydrosphere covers eight-elevenths of the earth—the Lithosphere—to depths from zero at the shores to miles in the great deeps. Free or in combination it finds its way to unknown depths in the lithosphere giving liquid lavas, springs and water for plants. As vapor it fills the lower part of the atmosphere and serves as a storehouse for sun's energy, where its evaporation and transportation by winds and condensation give us dew, frost, fog, cloud, rain, hail, sleet, snow, rainbow and sun-dog. Along with carbon dioxide and air it weathers the surface of the lithosphere and by transportation and deposit sculpts it, at the same time forming soils for the growth of plants. Its constant transfer from regions of great evaporation to colder parts tends to lower the liquid level in the tropics and raise the solid level around the poles. Rains and melting snows give us surface water for streams and lakes, and with characteristic civilized cussedness we make an open sewer of each stream and a cesspool of each body of standing water. Of course we have typhoid and must have water-treatment and drainage canals to save us from the effects of our ignorance and criminal folly. Because of its solvent properties it is never pure, so sea-water has quantities of dissolved matter. Bicarbonates of calcium and magnesium carry untold tons of carbon dioxide in solution and this part of the cycle is usually omitted from the text-books. It dissolves gases from the atmosphere and as their solubility varies with pressure they diffuse to great depths and furnish oxygen for animals living in the abysses. It is the circulating fluid in all living organisms and both transpiration and digestion are carried on in its presence.

To understand these we must study osmosis and colloids. Our students will be surprised when they see that salting out of soap and the formation of deltas where the fresh water with its burden comes into contact with the salt sea-water are the same. Solutions and crystallizations, displacement of equilibrium, ionization, hydrogen-ion and hydroxidion giving us all of our acids and bases, irregular change in volume with change in temperature, phases and the astonishing changes at the transition points where the surfaces of the different phases come into contact. The use of water as a standard for specific gravity and specific heat, for heat units and the graduations on thermometers as a source of power, either directly as in turbines or to carry energy of coal over to cylinder of engine, as basis for transportation or for heating by means of hot water or steam. All of these are as interesting as they are practically important. Plants and animals are about 90% water. That which we use for domestic purposes should be like Cæsar's wife, above suspicion. The poet (?) says:

Raw water is a menagerie,
Boiled water is a cemetery,
Hard water is premature old age,
Filtered water is a gay deceiver,
Distilled water is pure water.

Now I submit that work done in some such way as this outline would indicate, but extended to take in the Lithosphere, the Phytosphere, the Zoosphere, and finally the Psychosphere would give our students a better outlook on life and more usable acquirements than they have had in the past. If they go from us with accurate and adequate information as to respiration and ventilation, food and drink, sanitation, and soils, they are in better shape to serve the community than they have ever been before. It is a case where a little leaven leaveneth the whole lump. Bring him and her to see that the universe is next to them at all points as long as he and his wife live, that whether they know these things or not these things are there to be utilized or suffered and that we know only what we carry around under our hats, and the rest will take care of itself.

The teachers of mathematics have concluded after a year of study that they have been going at their work in a wrong way. That there is no reason why algebra should precede geometry except that it has always been done that

way. And the same holds for the other departments of that science. As they look at it, the only guide to follow is that given by the pupil himself. Give him every year what he calls for without regard to what he may have the following year if he stays in school that long. There are texts on "unified" Mathematics now just as there are on "General" science. If we can get in two years of Unified science, it may leave such a good taste in the mouths of our boys and girls that they may even start to be specialists in the third and fourth years of the high school,—that is, if we keep them that long. And the chances are that many will remain who now "flunk" in algebra the first year. We shall not be training the students for life, but helping them to live for the school is a part of life. And let us not forget for a single day that we are not there to teach any subject or any science but to teach boys and girls,—quite a different matter.

16. SOCIAL SCIENCE SECTION

The Social Science Section was called to order by Chairman M. L. Flaningam of Urbana at 9 o'clock, November 19, in Trinity Church.

Registration cards were filled out by the members of this section.

After the necessary announcements by the Chairman, Prof. Larson of the University called the attention of the members of this section to the various exhibits arranged for their benefit.

Prof. P. V. B. Jones of the University of Illinois opened the program, speaking on the subject "Impressions Gathered on an Inspection Trip."

From a visit to fourteen schools the speaker drew the conclusion that very poor work was done in the history departments of these schools. There was poor work because there was no aim; teachers asked for facts only; no attempt was made to articulate facts. The reasons for this poor work were: the teachers were not trained to teach history; did not realize the need of historical study.

The speaker spoke of the governmental problems with which Charlemagne was concerned as of vital importance, and also of the social benefits to be derived from the study of Francis of Assisi.

A general discussion followed the talk by Prof. Jones.

The first member to speak placed the responsibility for unprepared teachers of history on the administrative officers who hired such teachers.

The second speaker spoke of the failure of teachers to relate big facts and little facts, and charged the University instructors with the same fault.

Mr. Page of the De Kalb Normal School defended the teachers who were forced to teach subjects which they were not prepared to teach, bringing out the fact that they often made a special problem of such subjects and did good work.

The second subject on the program, "Objectives as a Basis for Reconstruction of Curriculums in High Schools," was given by Mr. L. A. Fulwider of Freeport.

Mr. Fulwider spoke of the need of reconstruction thru school laws and also the necessity of scientific technique for curriculum reconstruction. The changes in modern life call for changes in the high school curriculum.

Both the National and Illinois Conference Committee have agreed upon the three life interests, Economic, Political and Social with the four major objectives, Health, Wealthy, Association and Beauty.

In discussing these four objectives the speaker said that good health habits are not emphasized and that hygiene is not taught in Illinois as required by law. As to wealth, there was a failure to teach economic problems of the times. In regard to association, the thought was brought out that we have promoted individualism rather than the social. Too few students were taking civics. Likewise beauty was neglected and more art was needed to touch the lives of people.

Mr. R. H. Bush of Joliet followed Mr. Fulwider, speaking on the subject, "The Curriculum in History in the Joliet High School."

Mr. Bush spoke of the history required in this school in 1914, and the reasons for the recent changes. Eighty per cent of the students taking Greek and Roman history took no more history.

Industrial history, commercial law and English history as separate courses have been eliminated from the curriculum.

As the course now stands, the freshmen have social science two days each week. Sophomores have civics three days each week. A course, one year in length, known as "A World Survey of History," is required of juniors. A two years course includes this course plus one semester of modern history and one semester of American history. One semester of economics and one semester of sociology are given in the senior year.

Mr. Bush discussed the merits of the text-books chosen for the various courses.

Principal Tubbs of Kenilworth lead the discussion on Mr. Bush's paper.

The speaker said that he would place the social studies second in importance to physical science and competitive sports. Mr. Tubbs considered sociology a legitimate subject for the high school curriculum. He spoke also of the work in history being handicapped by college requirements. As an example, no credit is given for courses in South American history.

Following Mr. Tubbs' address, Prof. Olmstead of the University spoke of the museum and exhibits, arranging convenient hours for inspection trips.

Mr. Bush of Joliet, replying to a question, stated that current events were taught in the English and civics classes in the Joliet High School and not in the history classes.

Mr. Page of the De Kalb Normal School agreed with Mr. Bush that English history, as a separate course, should be eliminated and that it could be taught in connection with American history.

AFTERNOON MEETING

The afternoon meeting was called to order at 2 o'clock with Mr. U. S. Parker, of Quincy, presiding.

Prof. Olmstead of the University spoke on "The New Ancient History."

Before beginning his address Prof. Olmstead read a communication from Prof. Breasted in which he expressed regret on account of his inability to be present at this meeting and offering his felicitations to the history teachers of the State.

The speaker dwelt at length on the fact that it has been only lately that we have understood the ancients. It is only in this generation that we have discovered the Roman Empire and learned that the Roman Republic was just a prologue to the Roman Empire. Prof. Olmstead brought out the fact that the problems of ancient times are those of our day, using the land systems of ancient Rome and those of our times as examples. "In the study of the ancients we learn what not to do to-day."

The speaker emphasized the fact that history is not just written records. Also, ancient history must include the civilization of the Orient.

Prof. Olmstead closed with an earnest appeal for making ancient history more vivid.

Miss Beckwith of the Urbana High School followed Prof. Olmstead.

The speaker spoke of the difference in the old and new textbooks and the help that the latter lent in changing the idea that the ancient peoples were not real. Along this line, Miss Beckwith mentioned the recent excavations and the writings found, all of which lend aid in arousing interest. By concrete examples of class room work, the speaker showed how she was able to make the ancients live again for her pupils. Miss Beckwith made a plea for the teaching of history as a connected story.

Mr. Bush of Joliet raised a question concerning the amount of time ancient history should have in a curriculum.

Prof. Olmstead answered Mr. Bush, stating that he thought one year the proper length of the course. He also added that he doubted the wisdom of teaching sociology and economics in high schools.

Mr. Page of De Kalb followed with the statement that in his opinion these subjects could be taught in connection with other courses in the history department and need not be given as separate courses.

Mr. Parker of Quincy spoke in favor of sociology and economics as separate courses.

"Recent Tendencies in the Teaching of Civics" was discussed by Helen G. Bardens of Moline.

From questionnaires sent to twenty-two schools the speaker was able to draw conclusions as to the place civics was given in the curriculums, the amount of time allotted to the course, methods of conducting the work, amount of time spent on current events, number and kind of inspection trips.

Prof. Hollister of the University of Illinois lead the discussion of this paper.

The speaker contrasted the traditional idea of civics with the modern. He showed that the old civil government was necessary to teach the fundamental principles of a new and representative government.

Prof. Hollister urged that enough civics be taught to help the individual to understand the family, community, State and Nation and especially representative government.

The speaker spoke of a few practical lessons as learning the value and importance of contracts, something about insurance, mortgages, etc.

Prof. Larson called the attention of the members to the necessity of electing one member of the Committee.

Mr. Bush moved that Mr. M. L. Flaningam be reelected.

Mr. Flaningam was reelected by unanimous vote.

The meeting adjourned.

IVA MARGARET STILL.

[The papers follow in their order of presentation except that no copy was received from Prof. Olmstead.]

Objectives as a Basis for Reconstruction of the Course of Study

L. A. Fulwider, Freeport

Two years ago Dr. Hollister, High School Visitor and Director of this Conference, and Dr. W. W. Charters, then Dean of the Department of Education of the University of Illinois, initiated a plan to undertake a cooperative work of reconstructing the high school curriculum. An organizing and advisory committee consisting of Dean Charters, Superintendent R. O. Stoops, Joliet; Principal H. G. Schmidt of Belleville and R. L. Sandwick, Highland Park, were appointed.

Last year Principal R. L. Sandwick made a report for the committee at the general session of this Conference. Dr. A. G. Capps had taken the place of Dr. Charters on the committee. Dr. J. O. Powers of the College of Education had compiled a bibliography of over 500 references on Curriculum Construction. Principal Sandwick, by and with the advice and consent of the committee, had carried on the project of determining the high school objectives.

Principal Sandwick stated three reasons why this is a favorable time for reformation of the high school curriculum. First—The new work brought into the schools by the influences of the war. Second—The new Continuation School law of Illinois. Third—The widespread feeling that the old theory of general training is inadequate. Under this topic he stated that "intelligence tests have indicated that it is doubtful whether education increases mental power in any appreciable degree." If the schools can not give a general mental training which will make the student competent in all directions by increasing his mental power, they *can* give him a specific training for specific requirements of citizenship, vocation and other social interests.

The committee realizing that life is not static, that there is constant progression, calls attention to the need of a scientific method or technique of curriculum reconstruction which continually used may determine (1) what subjects and activities should occupy the attention in high schools, and (2) what material should furnish the basis for each subject.

Curriculum reconstruction indeed is not a new discovery. Changes and adjustments constantly have been made in the schools, without educational conferences and the collective and cooperative work of the committees and scientific investigators. The curriculum will continue to be shaped and reshaped by new conditions as they arise. But these modifications have been made individually and sporadically. Many have been the result of the whim of the new man at the helm. There has been little of the wisdom of concerted thought and action. New wings have been built; structure lacks symmetry because there has been little of acknowledgment of the fundamental principles of educational architecture.

If we were a group of people commissioned to organize the railways of America, we know what our first task would be. In the beginning, we would establish the great terminal points. These we would connect by the trunk lines. After that, and on that basis, we would continuously arrange and rearrange the short lines, the feeders, whatever changes that were considered would be determined by the relation of the short lines to the great trunk system, with a definite purpose always in mind, to arrive over the main arteries to the established terminals.

This Conference of Illinois is fortunate in that its work along this study has been preceded by the work of the Commission on the Reorganization of Secondary Education appointed by the National Educational Association. The National Committee grew out of the work of the committee on the articulation of high school and college, which reported to the N. E. A. in 1911. The National Committee through sixteen subcommittees has been conducting a searching inquiry into the subject of reorganization of the high school. Seven of the committees have issued reports through the Bureau of Education. In 1913 a reviewing committee was appointed. This reviewing committee after three years' study issued a report 1918, No. 35, in which it outlined those fundamental principles that would be most helpful in directing secondary education. This report recognizes that, in the past few decades, changes have taken place in American life profoundly affecting the activities of the individual. As a citizen, he must to a greater extent, and in a more direct way, cope with the problems of community life, State and National Governments, and international relationships. As a worker he must adjust himself to a more complex economic order; as a relatively independent personality he has more leisure. The factory system has been substituted for the domestic system of industry; the use of machinery in manual labor, high specialization of labor, and the breakdown of the apprentice system. In connection with home and family life have frequently come lessened responsibility, on the part of the children; the withdrawal of the father and sometimes of the mother from home occupations to the factory or store. There have been changes in community life, in the church, in the state and in other institutions. These changes in American life call for extensive modifications in secondary edu-

cation. The national committee further recognizes the vast increase of city populations and the growth of high school attendance. Then, too, the sciences, particularly educational psychology, emphasizes the following factors:

1. Individual differences in capacities and aptitudes among secondary-school pupils.
2. The reexamination and revaluation of subject values and teaching methods, with reference to "general discipline." Former conceptions of general values must be revised.
3. Importance of *applying* knowledge. *Subject values* and teaching methods must be tested in terms of the laws of learning, and the application of knowledge to the *activities of life*, ——— rather than primarily, in terms of the demands of *any subject* as a logically organized science.
4. Continuity in the development of children.

Modern psychology goes to show that the development of the individual is in most respects a continuous process, and that, therefore, any sudden or abrupt break between any two successive stages of education is undesirable.

The national committee informs us "that the present need is for the formulation of a comprehensive program of reorganization, and its adoption with suitable adjustments, in all the secondary schools of the nation.

It is evident that education in the United States should be directed by a clear conception of American democracy. The national committee understands the purpose of democracy to be "so to organize society that each member may develop his personality primarily through activities designed for the well being of his fellow members, and of society as a whole, and consequently that education in a democracy, both within and without the schools, should develop in each individual the knowledge, interests, ideals, habits and powers, whereby he will find his place and use that place to shape both himself and society toward ever nobler ends."

This understanding of the findings of the National Committee on Reorganization of Secondary Education is important because it reveals the fact that there is almost exact agreement between the proposals of that committee and those of the Committee of this Illinois Conference. Both agree that there is present need for a comprehensive program of reorganization, and that before we can proceed with such a plan of reconstruction, the main objectives that should guide education in a democracy should be defined. To establish those objectives, or terminals, both committees determined to arrive at them scientifically by an *analysis of the activities of the individual*.

Both committees agree that the main life interests are (1) Economic life, (2) Political life, (3) Social life, as Principal Sandwick states them, or Vocational interests, Citizenship interests and Home-life interests as stated by the National Committee. It is perfectly evident that though the committee's use a slightly different terminology, the content of the corresponding terms is identical. The committees are thinking the same things. In this it is futile to quibble.

The fundamental essentials to human well being, in economic, political and social life, are four, according to our committee's report, (1) Health, (2) Wealth, (3) Association, and (4) Beauty. According to the committee education leads up through the various activities and subjects of instruction to the four objectives. "Education," says the committee, "should impart not knowledge alone, which has been our fetish in the past, but appreciation, habits, and skill as well. Through these four objectives the student should reach human well being in the three great life interests, economic, political and social life.

The following extracts from the Illinois Conference Committees' reports, supplemented by reference to the findings of the National Committee, illuminate each of the four objectives.

"The first objective is *health*. Everyone wants it, yet few have the appreciation, knowledge, habits, and skill to attain it. Its attainment should give us a more splendid manhood and womanhood, eventuating in economic life as happy and efficient workers, in political life as happy and efficient members of family church, and local society. The Greeks made health an objective in education. As a result they attained to a perfection of physique and carriage such as the world has never elsewhere seen. Health has not been an objective in our schools. In 1914 and 1915, the year when the Great War broke out, New York city expended in the promotion of health in the high schools less than .1 of 1% of the 44 millions raised for educational purposes. In the matter of physical training the schools of Illinois are behind legal enactment. It is said that only about one in five are complying with the law that requires at least one hour a week of physical training. In 1914 and 1915 algebra and geometry were taught to 75% of the boys and girls in high schools, while hygiene and physiology were taught to less than 10%. The second objective is *wealth*. Considered in the economic sense, the term wealth should have no odium attached to it. We should rescue this good word from the hateful implication which has been given it. The desire for wealth is legitimate and universal. Plato, the philosopher, wished to grow rich honestly. Even teachers have been known to abandon an opportunity for service in one community, taking a position in another because the latter gave greater returns in wealth, more economic power over board bills, room rent and other expense.

Ratzenhofer called "work" one of the great interests of life. But Small improved upon this by substituting the word "wealth." "Work," "vocation," "economic efficiency" are all terms which apply to the means of attaining the economic essential of well-being. Wealth is that important essential. By whatever term we call it, there is no question that economic satisfaction is, and has long been, an objective in education. And the educated world has been fairly successful in attaining the objective.

Another serious defect in our wealth program arises from failure to teach economic history and theory. The serious economic problems of today are ignored. As a result of this defect in high school education, visionary schemes are widely cherished which are as wild as those which actuated some of the leaders of the Paris Commune in 1793.

In determining whether reconstruction of the curriculum is advisable in attaining the second objective, we *must go to the economic* life of the people. In industrial life we will find a large labor turnover and much unhappiness due to the failure of men to get into the occupation for which their tastes and talents fit them. Evidently vocational guidance and enlightenment are needed. Further more we see only a few rising to economic independence through appreciation of thrift and through use of the knowledge, habits and skill that can attain thrift. Insurance actuaries report to the Bankers' Association that of 100 healthy young men at the age of 25, 64 will be living at the age of 65; of these 54 will be recipients of charity, either public or private. Some will say that this is due to our economic system; but it may quite as well be charged to the failure of schools to inculcate in the young the principles of thrift.

The third objective is *association*. Just as we rejected the terms "work," "vocation," or "vocational efficiency," because these are better regarded as means and not as ends, so the much used terms, "social efficiency" and "larger group consciousness," are really means of attaining the major objective, association. Through appreciation, knowledge, habits and skill in social matters men may enter into right relations with one another whereby happiness and efficiency may be promoted in all departments of life. The attainment of this goal involves teamwork, the sinking of self for the good of the group, playing the game like a good sport with honesty, truth, justice and the square deal; with good cheer, courtesy and modesty; with courage and obedience to the law and to rightful authority; with appreciation of men and with appreciation of the social character

of modern industry that makes of the humblest task a joyful service to others. All this is involved in the third objective. Our environment consists of *human* beings as well as material things; and much the most difficult element to which we must adjust ourselves in the environment is the human element. Natural science gives us the adjustment to material things; social science must teach us the adjustment to one another.

Modern educational thinkers have come to realize that our education has most conspicuously failed in the attainment of social satisfaction. We have promoted individualism in every class, whereas our economic life calls for social efficiency among men far more perfect than that for which we have prepared them. Democracy calls for political association; yet good people of education fail to unite for unselfish purposes when corrupt men unite for plunder. The Christian religion with its conception that God is love has been a powerful factor in building up a more perfect association among men. But religious differences have forced religious teaching out of the public schools. Has not the school the means of teaching association through activities that remain to it,—through contributions of sociology and ethics, through school spirit and loyalty consciously promoted and then generalized to apply to larger community groups, through the team work in mass athletics, through the promotion of social initiative and efficiency in the activities of school clubs, and especially through the teaching of history and literature? We believe that too few students are studying civics—7% in 1914-15—too few are taking part with adults in activities which promote community betterment. So long as educated men and women fail to go to the polls and vote, so long as industry is organized to promote not service but selfishness, so long as mobs of young men engage in lynchings and race-riots, so long we shall know that the third objective, association, is not attained.

The fourth and last objective is *beauty*. We believe that art should touch with its refining power the lives of more men and women in America. Art can furnish satisfaction when material wealth fails. The poor may still enjoy their music; their love of the beautiful may be satisfied without large expenditure in these days of free public libraries, parks and art museums. To be something of an artist oneself is to have an unending source of happiness and refinement. Without the refinements of the beautiful material wealth becomes blatant and disgusting, and fails to minister to the happiness of the rich. A sense of the beautiful in the laborer adds value to the products of labor; in political life it builds the city beautiful; in social life it decorates, enriches, and ennobles all association.

As I understand it the Illinois Conference Committee has not the remotest idea of quibbling over the terms used to set forth the four objectives, but will be quite satisfied to find agreement on content. The terms used were chosen because of the desire to make them available to the simple as well as to the wise. Every normal person wants health, wealth, association and appreciation of the beautiful.

The four major objectives are closely related, each cooperating to produce the others. In the same manner subjects now in the curriculum clearly and logically relate to more than one of the objectives. Whittier's poems aided political action to end slavery and Mrs. Browning's poem, "The Cry of the Children," was a factor in the reformation of English Industrial Life. Science has been and is the servant of health and industry.

The Illinois Conference Committee closed its report as follows:

"With these four objectives, health, wealth, association and beauty, before us, we have a means of determining "what studies are of most worth." It will be found that those are most beneficial in education which make the largest contribution in promoting the four objectives. That material which serves these four great interests best must be retained; that which serves them the least may be soonest abandoned. The first efforts toward curriculum reconstruction might

well consist of a consideration of the actual contribution of each study in terms of the ultimate objectives, the four fundamental essentials of human well-being. If to attain these essentials of well-being, the regular curriculum needs immediate supplementing, supplementary material may be introduced into courses wide and general in character such as history, civics, literature and English composition and into the extra curriculum activities, clubs, and general assembly exercises.

Dr. Charters, two years ago, before the general session of this conference made a distinct contribution to this subject by stating seven general rules which govern the technique of scientific methods of curriculum reconstruction:

- (1) First, study the life of man in its social setting and determine the ultimate (major) objectives.
- (2) Analyze these objectives and continue the analysis until secondary units of workable size are obtained.
- (3) Arrange these in order of importance.
- (4) Raise to positions of higher order in this list those objectives which are high in value for children, but low in value for adults.
- (5) Determine the number of the most important objectives which can be handled in the time allotted to school education after deducting those which can be learned outside of school.
- (6) The best practices of the race in handling these objectives should be collected.
- (7) Arrange them in proper sequence according to the psychological nature of children."

The committees have followed these rules as far as they have gone into the subject, which is of course only a beginning.

Most of us will agree with Prof. Bobbit when he states that we may not all agree on all the objectives, but a few clean-cut ones are far better than none at all.

Dr. Capps has added much to the discussion. He states that having made a particularized analysis of the objectives, the next logical step is to discover the most efficient activities necessary to attain such unit objective. For instance, he said that in civic life the problems might be detected by a study of the record of the courts. This would give a list of legal problems. Right now we are confronted by a practical problem in planning our Continuation schools required by law. Young people ages 14 to 18 not in school must be provided continuation school opportunities 8 hours a week in 1923. What courses shall be offered? This problem has been attacked in some cities by making an accurate survey of all young people who will come under the continuation school law. These surveys make an analysis of the students' condition and attempt to discover his needs and desires in so far as they may be met by the continuation school program. Such facts as age, home conditions, education, health, kind of work now engaged in, kind of work student wishes to be trained for, are secured. These may be tabulated and corresponding courses offered when the number justifies it. By such analysis the curriculum may be arranged to give the training actually needed or desired. Keeping in mind the major objectives, the continuation school program will also include courses leading up to Health, Association and Beauty.

When a problem is discovered in human activities, Prof. Charters says a call is made for subject matter. Fundamentally subject matter must be justified by its usefulness in solving the problems manifest by individual activities. The major objectives leading to the main life interests may be used to determine the relative value of subject matter. That is exactly what social science teachers have been more or less blindly trying to do. It is this analysis of subject matter to discover its relative value as a contribution towards the major objectives, that has required the labor of our committees of VII, VIII, V, etc. The full year

of ancient history held sway so long, no doubt, more because the curriculum makers were thinking more about an organized body of fact than about the needs of students who must battle with life interests. Or rather in many cases it was because a very few students must be prepared for Vassar and Dartmouth. Again, by some deductive reasoning by modern teachers with the minds of mediæval forerunners, high school students who were offered a year of ancient history and modern history up to 1870, were denied American history, economic and social problems. If this plan of setting forth major objectives that lead up into a happy adjustment of life interests, may cause us all to break away from the worship of subject matter for its own sake, away from the college professors' "body of fact" demands, and turn our attention to a study of relative values, we may be able to proceed, in social science curriculum making, in the direction of the growth of the student to the end that he may comprehend his relationship in association and that he may have the power to realize his possibilities.

A number of studies have been made on this basis. Charters minimum essentials in Elementary Language and Grammar, minimum essentials in High School English.

The elimination and enriching process has been going on in arithmetic, spelling and in secondary mathematics.

Our task now would seem to begin with subject matter now in the high school, analyzing it down to workable units. The problem here, just as in the continuation school, is to find out the genuine activities of youth and adult that need this working unit to further them. Dr. Capps suggests that in history we may take the name of a historic character, as one working unit, and find out how often the name of this historic character is used by a certain type of citizens.

Another method would be to determine the specific objectives of each subject in the Curriculum in the light of the Major high school objectives. Elementary algebra is being thoroughly tested in this manner. Eventually every working unit of every subject in high school would be thus tested out.

The need for objectives to guide high school curriculum making is evident. The committee on social science curriculum working under the direction of the National Principals' Association reported that "even the progressive schools that are eager to do something along these lines are groping blindly. The authors are uncertain in many cases whither they are going. The problem which confronts this movement at present is a problem of getting productive people to co-operate in working out a series of very vital experiments."

This section would possibly find it advantageous and opportune to consider the plan of one of the latest committees for social science courses in the high school. Keeping in mind the crowded condition of the high school subjects, this section may be able to agree on a minimum course of three years required of all students, one year for a world survey, one year for American history, and one year for the study of economic and social problems. If this section could be the instrumentality of standardizing the above minimum requirements, electives elaborating any subject or period may well shift for themselves.

Keeping in mind the major objectives, it would seem that nothing less than the above should be tolerated in an accredited American high school. The danger is that the year's world survey with emphasis on the period following 1870 will be made only an elective, that a one-year course in American history may be made only an elective, that the year's study of economic and social problems may be made only elective. It is amusing but discouraging to hear a high school principal talk about having American history, or economics, or social problems in his course of study, when too often each is only elective and serves but a small percentage of the student body. It is to be hoped, of course, that in his delirium no high school executive would dream that he had solved the problem in that mostly discarded method of offering or requiring one semester

of American history and one semester of economics, or civics. It is farcical that such schools should receive financial aid by taxation of the American public. If this section could agree on the three year minimum, why not then bring pressure to bear on the University of Illinois and the State department to the end that no high school shall rank as an accredited high school which does not require of all its students the three-year minimum.

The relative value of community civics would be determined according to its service towards the major objectives. It may readily be found that much civics teaching will not produce good citizenship and that an enthusiasm for the purposes and ideals of American democracy arrived at through a study of history may have higher values.

To accept the general plan of the four objectives and then proceed through cooperation of teachers to an analysis of working units, would seem to be sane approach to the problem of curriculum reconstruction in general and for the social sciences in particular.

The Curriculum in History in the Joliet High School

Ralph H. Burk, Joliet

Mr. Chairman, Members of the Social Science Section:

When I received a letter from Dr. Larson asking me to appear here today, I felt somewhat as the young man standing on State Street in Chicago did. It seems that he had an impediment in his speech. As he was standing, a woman stepped up to him and asked him the way to the Northwestern Depot. He replied as follows: "You g-g-go two b-b-blocks t-t-that way—then t-t-three blocks this way; t-t-then t-t-turn to y-y-your right t-two m-more b-b-blocks and y-y-you are there." She thanked him and went on and he turned to a bystander and said, "Just my luck, 2,568,315 people in Chicago and she had to pick on me." Now, I feel in the same condition. All you people here and Dr. Larson had to pick on me.

In describing the History and Social Science curriculum of the Joliet Township High School, I shall attempt briefly to show you the methods by which we reached our present curriculum and give you the names of the books we are now using, stating whether we have found them satisfactory or not. Whenever I mention History Department, I mean History, Social and Political Science and Economics.

Previous to 1914, the History curriculum consisted of Ancient History the Freshman year; Mediaeval and Modern History the second; English History the Junior and American History the Senior year; also a one semester course in Civics given to the Seniors; as an elective in the Junior and Senior years one semester of Industrial History and one of Commercial Law was offered. About 1914, the History Department reached the conclusion that it was not entitled to one-fourth of a student's entire time in the high school. The teaching force felt that there were other subjects that should be taught during a part of this time. The question was debated to and fro as to the subjects that should be offered and those that should be eliminated. At length the conclusion was reached that Industrial History and Commercial Law have no place in the high school curriculum. Not that they are not excellent subjects, but that the amount of valuable material they contain can be given in other courses. It was also decided to eliminate the English History. Investigation showed that one hundred and fifty students were taking civics in their Senior year. As the Sophomore class numbers, annually, about 500, this meant that approximately 350 students were leaving the institution yearly without a course in Civics. That led the History group to urge that Civics be required of all students in the Sophomore year. Immediately we were confronted with the problem of the required sub-

ject that could be eliminated from the Sophomore year. Now, as you all know, the matter of approaching the teachers of another department with the suggestion that your course should be substituted for theirs is a very delicate one. In our reorganization work we wished to have the hearty cooperation of the entire faculty. We did not wish to antagonize any one of the departments. At this phase of our efforts a brilliant inspiration struck us. Physical training was required of all students in the high school two days a week. The Freshmen took theirs on Monday and Wednesday; the Sophomores on Tuesday and Thursday; the Juniors and Seniors on Tuesday and Friday. The days the students did not have their Gym work they reported to study halls. That meant that our sophomores were carrying their four regular subjects every day, and on Tuesdays and Thursdays their Gym work besides; and on Monday, Wednesday and Fridays they went to study halls. We said, why not take this one semester Civics course of the Senior year and give it to the Sophomores on Monday, Wednesday and Friday for the entire year? By doing this no other department was disturbed; so all the departments entered heartily into the movement and the course was established. Immediately we were faced with the administrative problem of arranging a teacher's program to teach Civics classes three days a week and have no classes two days a week. Then we said, "What is good for Sophomores three days a week surely can be made good for Freshmen two days a week." As the Freshmen take their Gym on Monday and Wednesday, that would leave them free Tuesday, Thursday and Friday to go to Study halls, so we put in a Freshman Social Science course on Tuesday and Thursday, which left them free to go to the Study hall on Friday. This we later changed by sending them to the Auditorium for Music on Friday. Then we had a full program and from the administrative point of view the problem was simple; the teachers would teach Sophomores Civics Monday, Wednesday and Friday; while on Tuesday and Thursday at the same time they would teach Freshmen Social Science. After having worked out the course for the first two years, we were able to turn our attention to the upper two years.

It was decided that we should offer a one-year history course and a two-year history course both beginning in the Junior year. We felt that we could demand every student upon reaching the Junior year to choose either the one or the two-year course. If he chose the one-year course, we gave him a course in World History, or as some of you might call it, "General History." We prefer to use the words "World Survey" of history to the term "General History," because of the prevailing abhorrence that History teachers seem to have to a General History course. Frankly, this one year course we look upon as one of the best courses that we offer. In the Senior year, required of more of the students, and elective on the part of about 10%, Economics is given in the first semester and Sociology in the second. If in the Junior year the student decides to take the two-year course, he is entered in what we call History I, and History II. History I. being the first and History II. the second year of the two-year course. The second semester of History I. we cover the period of medieval and modern up to the Peace of West Phalia in 1648. The first semester of History II. we finish the Modern History to 1920. The second semester of History II. is devoted entirely to American History. Now, I know what is in your minds right now. You are saying: "Why, do they only give one semester to American History?" I challenge you to show me any high school in the country that requires more American History of its students than we do. In the Freshmen year all are required to take a Social Science course; in the Sophomore year Civics; in the Junior and Senior year, with very few exceptions, all take Economics and Sociology. We feel that with all these requirements, one semester of the political phase of American History is all that is needed. So much for the course of study.

Now for the books used. As you will recall, our Freshmen are required twice a week to take a Social Science course. We searched diligently to find a

text for them, but without success. So we tried writing our own manuscripts, using our own outlines, and at first we called this course "Socialized Hygiene." I neglected to say that on account of the classes naturally being divided to go to Gym, into boys' and girls' classes, we felt it wise to continue the division in the Freshmen Social Science classes and also in the Sophomore Civics classes. That meant that we could have a man to teach the boys both Freshmen and Sophomore and a woman teacher for all the Freshmen and Sophomore girls' classes in Social Science work. Today we call the Freshmen Social Science course a course in "Occupations." We attempted the past year to use our own outlines, but I will confess to you that they have not been entirely satisfactory. This summer we adopted, to take effect this coming February, as a text for the boys in the Freshmen Occupation course, Gowin & Wheatley's book, "Occupation," by Ginn & Company. For a year and a half we have contemplated using this text, but refrained from so doing until we could find a text for the girls. At last we are successful and next February in our Girls' Occupation Classes the text will be Hoerle & Saltzberg's book, "The Girl and the Job," by Henry Holt & Company. I may say, by the way, that Miss Hoerle has visited us and talked over our course with us and a revision of this book, which has just come off the press, will be out shortly. In the Sophomore year the text that we have been using has been Lapp's "Elements of Civics," by Bobbs Merrill Company. This book has not been satisfactory and next February we shall change to Ashley's "The New Civics," by Macmillan Company. In our one-year history course or World History, we use two books; the first six weeks we devote to Ancient History and use Wolfson's "Ancient Civilization." The balance of the year we use Harding's "New Medieval and Modern History." Both of these books are by the American Book Company. The first year of the two-year history course we use Ashley's "Early European Civilization," Macmillan Company, which is quite satisfactory; the first semester of the second year of the two-year course we have been using Ashley's "Modern European Civilization." You will recall that we devote one semester to the period of history from the Peace of West Phalia down to date. Ashley's "Modern European Civilization" has not been satisfactory for our needs; it is too large. We shall change that text in February and use Webster's "European History, Part III, Modern Times." In the second semester of the second year of History, which is our American History, we use Muzzy's "American History," Ginn & Company; while this is not exactly the book that we wish, because it was written for a full-year course and not a one-semester course, still by the use of our own outlines we are able to make it do. Our course in Economics, which is offered the first semester of the Senior year, has been a thorn in the flesh. Before the war we were using Birch & Nearing, which was fairly satisfactory, but as in most cases during the war, on account of Scott Nearing, we changed and put in Adam's "Description of Industry," by Henry Holt & Co. The book has not proven satisfactory. At the present time we are wavering between two books. One is Thompson's "Elementary Economics" by Benjamin H. Sanborn & Co., and the other Marshall & Lyon's "Our Economic Organization," by Macmillan Co. This later book will not be off the press until the first of January. I have seen it in manuscript form. Marshall is Dean Marshall of the School of Commerce and Administration of the University of Chicago, while Mr. Lyon is Assistant Professor of the School of Commerce and Administration of the same university. Mr. Lyon was for a number of years a teacher in Joliet Township High School and is very familiar with the history and social science scheme that we have in mind. We will undoubtedly choose one of these books as our Economics text. In Sociology, which is given the last semester of the Senior year, the text that we use is Birch & Patterson's "American Social Problems," Macmillan & Company. This is an excellent book.

As a summary of our curriculum then—in the Freshmen year we give twice a week a course in Occupations, text for the girls being Hoerle & Saltz

berg's "The Girl and the Job," by Henry Holt & Company; for the boys the text is Gowan & Wheatley's "Occupations" by Ginn & Company. In the Sophomore year we have Civics three times a week, the text used being Ashley's "New Civics," Macmillan Company. In the Junior year in the one-year history course—the World Survey—Wolfson's "Ancient Civilization" and Harding's "Medieval and Modern History," American Book Company. In the two-year history course the first year, Ashley's "Early European Civilization," Macmillan Company; in the second year, the first semester, Webster's "European History, Part III., Modern Times," D. C. Heath & Company; the second semester of the two-year history course, Muzzy's "American History," Ginn & Company. Economics, either Thompson's "Elementary Economics," Sanborn & Company, or Marshall & Lyon's "Our Economic Organization," by Macmillan Company. Sociology text is Birch & Patterson's "American Social Problems" by Macmillan Company. We feel when a student in his Freshmen year takes a course in Occupation, in his Sophomore year a course in Civics, in his Junior year the one-year or the two-year history course, and also the semester course in Economics and in Sociology, I say that we feel when a student has finished these courses he leaves our institution with a strong foundation in history and social science.

Mr. Chairman, I think you.

Proposed Reconstruction of the Curriculum in History **Eston V. Tubbs, New Trier Township High School**

GENERAL DISCUSSION

Our high school program of studies is undergoing constant change and flux. It is well that this is so. But in this process of adjustment and readjustment many problems assert themselves that require for their solution a great deal of thought and painstaking care.

From time to time pressure is brought to bear upon those in administrative authority either to make an increased time allowance for subjects which already occupy time-honored places in our general educational scheme, or to make room for new subjects, which are making a strong bid for recognition. Among those subjects now pressing for consideration might be mentioned Vocational Guidance, Music Appreciation, Mental Hygiene, Automobile Engineering, Household Chemistry and so on *ad infinitum*. We must, then, at the very outset, keep in mind the fact that the time element has a very important bearing in connection with any plan which has to do with curriculum reconstruction. We should base all our discussion upon the premise that the time now given to the social sciences in our high schools cannot be increased. If any modifications are to be made in the history curriculum, they should apply to content and its reorganization.

Perhaps the best history curriculum in use at the present time is that of the Pasadena High School. Their four-year course is organized as follows:

First Year—Early European history to 1648.

Second Year—Modern European history since 1648.

Third Year—American History and Civics.

Fourth Year—Economics and civic problems.

The above plan is in harmony with the recommendation of the Committee of Five that less stress be placed on Ancient History. However, high schools from which a very considerable number of students go to eastern universities will be very conservative when it comes to eliminating Ancient History from the curriculum for the reason that our colleges are very slow and often very reluctant to respond to liberalizing influences or to changes which nearly all will agree are highly desirable.

High school principals find that semester courses are at times a great convenience. Hardly a semester passes that we do not find that such courses as

Civics, American History, Economics, English History, etc., are a very present help in time of trouble. Many times it would be impossible for the principal or those in charge of the registration of students to arrange the programs of seniors so they will be able to conform to the requirements for graduation with their class were it not for half-year subjects.

In recasting the social science curriculum we should give careful study to those leaks in the dykes which are threatening the most cherished institutions of human society with destruction. While education has done much, still there is a great deal that has been left undone. But in the face of all the expenditures made and the efforts put forth, we seem in the main a nation of opportunists. Never before in the history of mankind have we been confronted with such gnarled problems as are pressing for solution at the present moment. The following might be instanced: Immigration, the race problem, crime and punishment, poverty causes and possible remedies, capital and labor, strikes, breaking of trade and wage agreements, profiteering, etc.

If there is any one thing that has more than any other influence brought about in men a reversion to primordial instincts, that one thing is profiteering. There seems to be a universal inclination "to slap on all the traffic will bear." This gouging of one by another begets an attitude of mind that does not bode well for the future. We have come dreadfully near that condition where dog eats dog. The road to recovery will be long and tortuous.

Some one has said that "The strength of a nation, especially of a republican nation, is in the intelligent and well ordered homes of the people." Let us consider for a moment one of the symptoms of a disease that is undermining our national well-being. The period from 1887-1906 brings to light that 945,625 divorces were granted during this time. The movement is constantly gaining in velocity. At present, one marriage in ten is broken by divorce and in some states the proportion is as high as one in four. Our rate is twice that of Switzerland, three times that of France, five times that of Germany, and many times that of England and Canada. This one topic alone could be greatly elaborated, but time forbids. Volumes might be written on any of the topics suggested a moment ago.

Keynes in his epochal book, "The Economic Consequences of Peace," has called sharply to our attention the necessity of acquainting high school students with such subjects as: Relations with foreign countries, international finance, social conditions, ethnic problems, commercial relations, food supply, and others that affect every human being in the world today. We can no longer neglect to teach in our schools, and particularly in our high schools, facts that are so vitally related to human existence.

A better understanding and comprehension of the problems just mentioned means more to mankind than any one can tell. Any plan for reconstructing the history curriculum must be shot through and through with emphasis upon social and economic problems.

The New Ancient History **Lorena G. Beckwith, Urbana**

Not many years ago the study of ancient history meant the study of a more or less uninteresting jumble of wars, generals and political events, coupled with the memorizing of innumerable dates. A few of the boys found the study of the military history very interesting, but the most of the pupils felt that they were lost in a hopeless maze. Few of them realized that they were studying the story of people who had the same hopes, fears, loves, hates, disappointments and ambitions as do we ourselves. For some reason there was no bridge between the ancient people and ourselves.

Today it is changed. The pupil is surprised and delighted to find that ancient history is interesting, that it deals with the lives of real people, and that it is closely connected with our own lives.

What has made the difference? After all these centuries have passed, what can have produced such a change? The answer is simple. The discoveries of the historical research workers, the excavators and the students of ancient languages, who have deciphered the long forgotten writings of the ancient peoples, these are the things which have wrought the change. These explorers, not of the frozen zones, but of the regions where once stood the magnificent ancient civilizations, these delvers into the mounds of rubbish which are all that remain of the ancient splendor have opened for us "vast historical volumes" hitherto unknown.

In the school two factors, as a result of this work, have changed the old ancient history into the new. In the first place the text book of today is vastly different from the one of a few years ago. We can note this difference in two particulars, the style and the content. The boys and girls find that their ancient history text is as easily read and is as interesting as a story book. It deals with real people, their customs, inventions, social institutions, religious life, education, economic conditions, literature, art, and architecture in addition to the traditional military and political development. The pupils now find it easy to put themselves into the period which they are studying, whereas, before, they were forced to examine it from the outside. This feature of the (V) modern book is greatly enhanced by the other, the numerous pictures, pictures of actual ruins and relics, and also of restorations of ancient buildings. These pictures, with their footnote explanations, appeal to both the eye and the imagination. Anyone who gives even a casual inspection to "Breasted's Ancient Times" will find that these statements apply particularly to it, for it is especially easy to read and is intensely interesting. On the other hand, of the seven hundred pages in the book, more than two hundred are devoted to pictures. The notes beside the pictures, instead of being the fine print which the pupil skips, are the explanations which give the pictures their greatest value.

The second factor, referred to above, is the museum. The pupil who visits the Oriental and classical museums, where he sees the very letters, tools, weapons, utensils, pictures, furniture, etc., which were a part of the daily life of a people, dead for possibly six thousand years, finds himself possessed by a sense of reality in all this past life which can be gained in no other way. Even the pupil who is not so fortunate as to be near a museum, knowing that other people can actually see and touch these articles and that he himself can at least see pictures and read descriptions and interpretations of them, finds that they make the past real to him.

There is one other source of information readily available, the magazines, particularly the National Geographic Magazine and Asia, which, with their well illustrated articles on present day explorations and discoveries, make a direct appeal to the young student of ancient history.

Turning again to the modern text book, we find that it makes clear the fact that it contains the story of man's continuous growth, from the time when he was more animal than human, "with nothing to help him" and "no one to teach him," to the time when, through his own endeavors, he had progressed step by step to an extremely high plane of civilization; that it is divided into four great chapters simply because it is easier for detailed study, not because these chapters were independent.

In the discussion of the early man, the pupils, some for the first time, see how man was at first really an animal, leading a life whose aim was to secure food; how later he began to show the difference between himself and the other animals by adapting things to his own needs, instead of either adapting himself to his surrounding or else moving to a milder region; how he gradually began

to feel new needs; and how he learned to satisfy these new needs. They begin to realize how much we owe to this early man for making the remarkable first steps which have made it possible for us to go so far forward.

It is very easy for the young person of today to become possessed of the idea that we are wholly responsible for the wonderful age in which we live. But when he studies the history of the Nile Valley, the Two Rivers district, and the Aegean World, he is surprised to find in each a very high state of civilization; he is dazzled by the splendor of the ancient Orient; he is astonished to find that man could make such tremendous strides along the road of progress in so short a time; he is amazed to find that the inventions and discoveries then made are even more remarkable than are our own. The boy of today stands in awe before the colossal monuments of Egypt, realizing that their construction would be a tremendous task even for us, who have so many inventions to aid us.

The student of the old text book was told that the Greeks reached heights attained by no other people and that we owe to them most of our civilization. He heard, but he did not believe. He could see no connection between the Greeks and himself. But the student of the new text book, seeing the Greeks not only at Theomopylae or at Marathon, but in every phase of life, seeing copies of their works of art, reading the translations of their literature, finding out what their understanding of science enabled them to accomplish, understanding their ideals for citizenship, appreciating their aims of education—the pupil of today can realize why Greece has been the model for succeeding generations. He realizes, also, that the Greeks drew ideas from the Orient and then, because of their superior genius, added to or changed them, giving them back to the Orient bigger and more beautiful.

Finally, the pupil of today realizes the importance of Rome, not merely the military Rome, but the Rome which by its remarkable ability in organization gave the ancient world time to become so completely Hellenized that the incoming barbarians could not destroy Greek civilization. They realize that this important task the Greeks could not accomplish, because they lacked the ability to form a union.

In conclusion, we may say that the new Ancient History enables the pupil to gain a comprehensive understanding of man's progress from the time, probably five hundred thousand years ago, when he took his first struggling steps upward to the time when he had reached the heights; it shows him that we still have things to discover, processes which were perfected by the ancient peoples; and it teaches him that our own civilization is, not something separate, but a result of the work of ancient man.

Recent Tendencies in the Teaching of Civics

Helen G. Bardens, Moline

The problems which have arisen during the past few years to threaten our democracy have brought us to the realization that our training for citizenship, which has consisted in a brief course emphasizing the processes and functions of government, has been inadequate. We can no longer ignore the social and economic problems with which we are confronted today. It is only through a scientific study of such problems that we can hope to train our citizens for intelligent participation in public affairs.

A number of organizations, such as the National Committee for the Teaching of Citizenship, the Committee on Social Studies of the N. E. A., the Committee on History and Education for Citizenship in the Schools, have been formed to cooperate with the schools in extending their social science courses to meet the present needs. As a result of extensive investigation they have been able to submit plans for the revision and extension of the course of study, and

already a large number of schools have responded by complete or partial reorganization of the social science department.

In order that I might bring before you the recent tendencies along this line in the schools of this state, I prepared a questionnaire aimed to cover some of the more important matters which have found their way into a great number of our civic courses today. As it was impossible to make a state-wide inquiry, I selected 24 of the representative schools, to which copies of this questionnaire were sent. The 22 schools which replied are as follows: New Trier at Kenilworth, J. Sterling Morton at Cicero, LaGrange, Galesburg, Englewood, Joliet, DeKalb, Rock Island, Freeport, Bloomington, Rockford, Evanston, Canton, Oak Park, Streator, Ottawa, Elgin, Princeton, Sterling, LaSalle, Decatur and Champaign. I greatly appreciate the cooperation of the principals and instructors upon whom I depended for much of the material in this paper.

The questions included in this inquiry may be grouped into five topics upon which I have based my discussion: First, the year or years in which civics is offered and the factors to be considered in determining this; second, the methods of studying events of the day and the time given to such a study; third, the preparation of the future electorate; fourth, the emphasis placed on the Americanization movement, and, fifth, the extent to which social and economic problems have become a part of the civics course or of the high school curriculum.

The first question which must be decided in planning a course in citizenship is its place in the curriculum. In what year or years of the high school should it be offered? Since our government is based upon a majority rule it would seem that our aim in such a course should be to *reach* the majority. And if so, is this majority to be found in the high school? The results obtained from a recent investigation made in the cities of our state with a population over 20,000 are significant in this connection. It was found that the students of high school age, that is, from 14 to 18 years, number approximately 55 to each 1,000 of population. Only three schools enroll more than fifty per cent of this number and many of them less than twenty-five per cent. This indicates that if a majority of our future citizens are to be reached it must be done in grades below the high school.

To determine between what grades the greatest mortality occurs and to learn how these facts are met would necessitate an extensive investigation which was impossible in connection with this paper. The best figures available from various sources show the widest variation, but taking it the country over, they indicate that approximately sixty per cent of the students who enter first grade are lost to the school system by the time the eighth grade is completed.

So if this country is to be made safe for democracy through instruction received in our schools, courses in citizenship or community civics must be offered somewhere in the grades, and according to the best available figures certainly in the seventh or eighth grades. And yet we realize that in such courses which would obviously deal with the immature mind, it is a question as to how many of the important problems can be given proper emphasis. Then, too, in many of the grade schools today the courses would be conducted, not by special teachers, but by those who are expected to instruct in a great number of subjects. These facts lead us to believe that in spite of the figure shown greater responsibility for training of citizenship rests upon the high school.

In any case we can not lose sight of the fact that local conditions must determine this largely, and replies on this question show a great variation. Fifteen schools state that the civics course is offered in the fourth year and in six of these this course is open also to third year students. An investigation made in the states of the North Central Association as to the methods employed for the training in citizenship was recorded in the annual report for 1920. This shows that about sixty-five per cent of the schools offer civics in the fourth year. It

is of interest to know that the per cent in this case corresponds almost exactly with that obtained from the replies which I have received.

Five schools offer civics or elementary social science in the first year of high school. A number of these courses I will describe more fully. The J. Sterling Morton High School at Cicero is one of these five to offer civics in the first year. This is in reality a course in elementary social science with a brief review of the forms and function of government which is well taught in the 7th and 8th grades. One semester of this course consists in a study of a series of modern problems, the other semester, a study of community civics or the part one takes in the world as a citizen. A separate course in economics is offered. Rock Island reports practically the same course for the first year, but offers an advanced course in civics in the fourth year as well as economics in the third year. At LaSalle the first year students study community civics in which special emphasis is placed on local problems and governments. A number of lectures are arranged on important subjects, such as City Planning, for which slides are used to show existing conditions in the city and the plans for future improvement. Fourth year students study more formal civics with emphasis upon the nation, state and national problems, and a more thorough study is made of political parties and party problems in this course. Rockford requires of first year students taking the commercial course one semester of civics and offers advanced civics as an elective for third and fourth year students. Five schools offer civics in the second year, three of which have advanced courses in the fourth year. This would enable those who drop out at the end the second year to complete a course in civics.

It is a well known fact that the unpreparedness of our voters in the past has been due not only to ignorance, but, a fact even more serious, to lack of interest in matters of public concern. Although many attempts are made today to educate and arouse our present electorate to the realization and understanding of their responsibilities, the real solution lies in our ability to prepare and interest our students permanently in public affairs. They have reached the most impressionable age and need the proper guidance for obtaining knowledge upon which to base their judgments. They are the ones who will be called upon in the near future to decide the course of national and international affairs, and to help in the solution of our great economic and social problems. And it is from this number that our future leaders will be chosen.

This brings us to a consideration of methods in use for presentation of events of the day. Concerning this the inquiry contained the following questions: "What proportion of time do you give to the study of current events? Is this done through the study of some specified magazine? Through reports from a number of magazines and newspapers? In any other way? Every school reports that some time is given to this, the amount ranging from one-fifth to one-half of the entire course. A number stated that such questions enter into every recitation and discussion. Schools do not agree, however, as to the value of using a specified magazine, some obtaining better results when each student has his own magazine, and others reporting that more effective work is accomplished by bringing current events into every discussion. A variety of methods are in use for stimulating interest such as: Requiring scrap books and note books with clippings and pictures, arranging for talks by outsiders with special knowledge, and by the organization of Current Events Clubs in which students are entirely responsible for discussions and sources of material. Such clubs have been organized in the civics classes at Moline. A president elected by the class has power to appoint committees on foreign, national, state and local affairs to serve for two weeks and to be responsible for the discussion of all important questions. Every member of the class serves on one committee. Each committee chairman directs the work of the members of his committee and usually assigns topics. The plan so far has aroused a great deal of interest.

At New Trier High School, Kenilworth, the text book is used as a point of departure for the discussion of all sorts of current problems. Special reports are used very little, as it is preferred that all the students do the reading. Occasionally, however, groups report on different magazines to get all points of view. When schools state that the students are so slavishly allied to one party that the party is placed above the country and their doctrine is "the party, right or wrong," it is time for us to step in and direct the discussions and reading in such a way that judgment and not inheritance will be the determining factor.

Never before has there been greater need for sane and intelligent participation in public affairs in which our influence is exerted largely through the ballot. Since at the present time political parties furnish the machinery and determine to a great extent the issues, a thorough study of these parties is a necessary part of the training for voting. To learn definitely in what ways the schools prepare the future electorate, I asked for replies to these questions: Do you conduct a systematic study of political parties as they exist today, encourage free discussions on such questions as capital and labor, the League of Nations, hold school elections on local state and national issues? Mention any other way in which this is done. In four schools no systematic study of parties is conducted. All others report a detailed study along this line. In many, discussions are encouraged by debating clubs, frequent reports and by talks in assembly. The problem of arousing interest in national, state and local affairs and of helping the student to feel he is already a part of the community has been met in part by holding actual elections. Eighteen schools report that this is being done regularly. No doubt these schools held such an election this fall. The students of the civics classes in Moline were in full charge of the election held there. They gave talks before the student body on the leading parties and the important issues. Specimen ballots were secured from one of the local papers. The polls and the counting of votes were also under their management.

New Trier goes a step farther in this respect by using regular election forms and employing the same process for all school elections.

Visits to local institutions and the investigation of projects in the community have served to vitalize the class room work and link the problems under discussion with those in existence in the community. Fifteen schools report that this is carried on extensively. Evanston makes use of the great wealth of civic material in Chicago and locality. The federal and county buildings are visited, as well as the library, municipal pier, forest preserves and many other places of interest. A session of the United States District court is attended by civics students. Rockford states that students are given an opportunity to participate in various civic activities with the hope that they will become so familiar with the rights, privileges and responsibilities that they will feel no strangeness when stepping into civic groups later.

Our present tendencies in training for citizenship might permit us to look forward to the future with some degree of complacency and optimism if it were not for our problem of assimilating the foreigners who are outside the limits of compulsory education and yet who have been able to meet our present requirements for naturalization and voting. It was the world war which disclosed the startling fact that the foreign born were not only illiterate, but were unamerican. Almost immediately was begun the Americanization movement which has reached almost every locality in which there is a large foreign population. What the high schools have been doing to aid this movement or to impress upon students the necessity for furthering this work has been suggested in the replies made to a group of questions included in the inquiry. These questions were as follows: Do you emphasize the Americanization movement by investigation of the need for that work in your locality? By investigation of work in progress in your locality? By any other methods. Thirteen schools replied that investigation is made in the locality, and four that there is no scope for such work. However,

all but three report that the need is discussed and methods employed in different parts of the country are studied. At Ottawa the Americanization movement is stressed in outside reading list and is covered by a semester paper on a current or social problem. Streator reports that the high school is aiding in a definite Americanization program, while at Cicero an evening school is conducted with 1900 registrations, and that there is constant work on this subject in the civics class. Joliet also conducts an Americanization school of 800, much information for which is sent to the foreigners through the civics classes. At Rockford the community civics classes cooperate with the Rockford Chamber of Commerce in giving naturalization papers. They invite the newly examined citizens to the high school auditorium, where the county clerk gives the final papers. The civics pupils give great consideration to these new citizens. Various patriotic societies are present to participate in some way.

Many schools may find it impossible to take part in the Americanization movement as actively as has been suggested in the case of these schools mentioned. Yet they can accomplish much by a study of the work in progress. The fact that today immigrants are coming into the country in such great numbers that at Ellis Island our officials and our buildings are not numerous enough to take care of them, would indicate that the future has in store for us as big a problem as we are facing today. If students are encouraged to make investigation and to study intensively the conditions which have called for this work they will have taken a big step toward solving the problem in the future.

Although my subject implies a consideration of civics alone, such a discussion would be incomplete without mention of the recent developments in the field of economics and sociology. We are aware that a citizen can no longer end his responsibilities with a knowledge of political matters. The social and economic problems of the community and the nation have assumed greater proportions than ever before and an understanding of the fundamental facts involved is necessary if the citizen is to aid in their education. This does not necessarily mean that there must be separate courses for these subjects. We find on the contrary that political and economic problems are very closely related and that the majority of our social problems are the outcome of these. This is clearly illustrated in the organization of many of our political parties. The Single Tax Party, which nominated candidates for the recent presidential election, is based entirely upon the economic question of revision of our methods of taxation. And some of our greatest economists have devoted their energies to the extension of this party principle. The prohibition party, which for years emphasized the moral and social evils of liquor, finally won out on its issue, if not its candidates, as soon as it proved that from the standpoint of economics liquor was an evil. During this last year the Farmer Labor Party was organized to obtain for the laborer greater benefits economically and industrially. And so it has been with our social problems. The economic conditions which are largely responsible for unemployment greatly increase poverty and crime. And we have seen in recent years the trend of population to the cities, where, as a result, the housing problem has taken on a very grave aspect.

How can we hope to solve our social and political problems without some knowledge of the economic laws which govern them?

Upon investigation I find that nineteen of the schools mentioned above have introduced economics as a separate course and four of these offer sociology also. Most of the others recognize the necessity of studying social problems and have introduced them to some extent into the civics and economics courses. Some schools set aside several weeks in one of these courses for the study of social problems.

Such a problem as unemployment which confronts us today, the problems of labor and wages, taxation and the tariff, government ownership, trade and transportation, though in reality economic problems, are closely related to polit-

ical questions. And our increasing number of social problems such as poverty, charity, crime, housing, immigration and the race problem as well as those of health, education, recreation and the "city beautiful" should be included in every high school curriculum whether they necessitate a separate course or not.

One of the greatest dangers in this democracy of ours arises from the inability or the unwillingness on the part of its citizens to think and act in terms of the welfare of the community as well as in terms of their individual interests. In no place do they have greater opportunity of developing a social consciousness than in the public schools, where the whims and desires of the individual must be subordinate to the welfare of the group. Through our social studies we hope to extend this to the community, the nation, and the world.

The aim of this discussion has been to give a definite idea of the arrangement and content of courses in some of our representative high schools and to point out the recent tendencies in adapting such courses to meet the demands made upon schools today.

Such an investigation enables us to draw certain conclusions concerning the courses necessary for an adequate training in citizenship. Every high school curriculum should offer an advanced course in civics with the following aims: (1) to give an understanding of the organization and functions of the government, (2) to train for intelligent use of the ballot, (3) to make an extensive study and investigation of community and national problems in order to improve our political and social conditions, (4) to arouse permanent interest in current problems, (5) to enable the student to assume responsibility, and (6) to give public service.

Also to advanced students a course in economics should be offered to include (1) a study of the fundamental principles and their application to industry, (2) preparation to participate in industry, and (3) emphasis on the economic principles which will aid in solving our social problems. An elementary course in the first year solves the problem of training those who drop out of high school at the end of the first or second year. Such a course should emphasize community problems and citizenship in the community or, better still, should take the form of elementary social science. The time given to these courses must be determined in connection with other subjects of the high school curriculum, and so with arranging them as elective or required subjects. Such a plan is conservative and may very well be amplified where conditions permit, but we should make our aim so to arrange our course that every student shall have received training in citizenship before he leaves high school.

Although our greatest task lies before us, I think you will agree that toward this end substantial progress has been made.

Abstract of the Discussion by Professor Hollister Which Followed the Reading of the Above Paper

The topic stressed by this discussion may be expressed in the query: What do we mean by civics? The earlier idea was that of a study of the mechanism of our national Government. The reason for this appears in the fact that under our constitution we had launched an experiment in government by the people thru their representatives. It seemed necessary, therefore, that the people should be trained thru the schools for the new duties thus assumed.

More recently we have come to realize that citizenship training must include more than this. The result has been the attempt to multiply subjects in the high school curriculum by introducing courses in community civics, sociology, economics, civic biology, etc., thereby tending to overload the curriculum.

The real need here is a reorganization and simplification of the materials of social science to meet the needs of the time. The rapid increase in material of this type, as a result of the recent experiences of the human race emphasizes this need.

The speaker then quote the Standard Dictionary definition of civics as follows: Civics includes (1) ethics, or the doctrine of duties in society; (2) civil polity, or governmental methods and machinery; (3) law, in its applications most directly involving the interests of society; (4) economics, or the principles or laws of wealth and exchange; (5) history or civic development and movement.

What of this material thus defined should the high school give to all pupils? Of the fifth or civic development enough to enable the individual to understand why he is here and the nature of our institutions,—as the family, the community, and the state. Of the second, or civil polity, knowledge sufficient to enable him to have clearly in mind the purposes of representative government as affecting the individual, the family, and other community institutions and relations. Also what is the true basis of representative government and the difficulty of its attainment.

Of the fourth, or economics, an understanding of its principles as affecting the interchange of services in providing the essentials of life in our social order, and the cooperative methods of supplying our common public utilities.

Of the first, or ethics, he should receive instruction sufficient to make clearly understood his duties and obligations to his family, community, state and nation.

The third, or law, should include especially that of contracts, with some special attention to such contracts as those of teachers, life insurance, ownership of property, and the marriage contract.

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ANNUAL HIGH SCHOOL CONFERENCE

TO BE HELD AT THE

UNIVERSITY OF ILLINOIS

URBANA

NOVEMBER 18, 19 AND 20, 1920

PROGRAM

**ALL PERSONS INTERESTED IN THE PROBLEMS OF EDUCATION,
ESPECIALLY THOSE OF THE HIGH SCHOOL, ARE INVITED
TO BE PRESENT AND PARTICIPATE IN THE DIS-
CUSSIONS. NO MEMBERSHIP FEE REQUIRED**

**PLEASE BRING THIS COPY OF THE PROGRAM WITH YOU AND
THUS AID IN PAPER SAVING**

**OFFICE OF THE HIGH SCHOOL VISITOR
PUBLISHED BY THE UNIVERSITY OF ILLINOIS
URBANA**

ANNOUNCEMENTS

1. Hotels, Rooms and Meals

Again we are compelled to economize in rooming facilities. Please be patient and accommodating. We will do our best.

Hotels, Champaign: Hotel Beardsley—European. Room, single, without bath, \$1.50; with bath, \$2.50 to \$3.00. Double, without bath, \$2.50; with bath, \$4.00 to \$5.00.

Hotel Inman—European. Room, single, without bath, \$1.50 to \$1.75; with bath, \$2.25 to \$2.75. Four in room, two beds, without bath, \$1.25 each; with bath, \$1.50 each.

Hotel Hamilton—Rooms, double only, without bath, \$2.50; with bath, \$3.50.

Hotels, Urbana: Columbian Hotel—European. Rooms, single, without bath, \$0.75 to \$1.25; with bath, \$1.50. Rooms, double, without bath, \$1.00 to \$2.00; with bath, \$2.50.

Meals are served in connection with the Hotels Beardsley and Inman, Champaign, and the Columbian Hotel, Urbana. Rooms in private houses near the campus and also farther out in Champaign and Urbana will be provided as far as possible. Applications for such rooms giving full particulars as to numbers, men or women, and character of accommodations preferred, should be made early. Address all communications to High School Visitor, 254 Administration Building, University, Urbana.

Meals: In Champaign, besides the hotels are the Cooper, Gehrigs and Robeson Building Cafeterias; also the Twin City Cafe; and nearer the University, the Third Street Cafeteria, Mc-Broom's, Mead's Cafeteria, the "Y" Cafeteria and the Green Tea Pot. In Urbana, The University Cafeteria, Woman's Building, and Chesley's, 707 S. Goodwin Ave.

Special Luncheons and Dinners: The Administrative Section (Principals' Association) will have the usual luncheon and business session at noon Friday in the basement of Trinity M. E. Church. Admission to members only. \$1.00 per plate.

The Classics Section will lunch together at the University Place Christian Church at noon Friday.

The Social Science Section are to have a special table at dinner Friday at 6 P. M., Trinity M. E. Church basement.

Representatives of the Entertainment Committee will meet incoming trains Thursday evening. The Headquarters Office, 254 Administration Building, will be open until all evening trains

are in. A street car will meet the Midnight train from the west on the Big Four Thursday night.

2. Registration

Owing to the fact that the Conference is broken up into many groups on Friday it is difficult to secure a complete registration which we need for a mailing list. **Please be sure to register in one section only, and when you first enter the section. Cards will be furnished for that purpose.**

3. Visitation of Buildings

Visiting teachers are asked to take time to visit points of interest about the University. This will be possible at the noon hour, Friday, and after the close of the Saturday morning session. Among the many interesting features are the following:

- The Engineering buildings and equipment.
- The Chemistry building.
- Lincoln Hall with its seminars and museums.
- The Floricultural group.
- The Gymnasiums for men and for women.
- The University Library.
- The Woman's Building and Household Science Department.
- The Armory.
- The Agricultural Buildings.
- The new Education Building.

4. Reception

A general reception to all visiting teachers will be given in the parlors of the Woman's Building, 4:30 to 6:30, on Friday. This is the one general social hour of the Conference. Do not fail to attend.

5. Special Announcements of Meetings

The General Conference Committee which includes all chairmen of Section Committees together with the Executive Committee will met as usual at 4 p. m., Thursday, November 18, in Room 354 Administration Building.

6. Railroad Rates

The Central Passenger Association has agreed to make a round-trip rate of one and a third fare from all points in Illinois and from St. Louis, Mo. This rate is granted under the following regulations and requirements:

The minimum round-trip fare is \$1.00.

Identification Certificates bearing the signature of the Director of the Conference must be presented by all purchasers to the local ticket agents where tickets for the trip are purchased, in order to secure the round-trip rate.

Tickets will be good only via same route in both directions.

Tickets must be validated at Champaign-Urbana ticket offices over whose routes the tickets read. This validation must be on date of leaving.

Tickets will be on sale Nov. 15-20 inclusive, and will be good for return on condition that passengers reach original starting point not later than midnight of November 26.

Special: Identification Certificates will be sent to all principals, superintendents, and heads of institutions. Teachers expecting to attend the Conference should get these before the date of starting.

The above rates and conditions apply to all delegates to the to the Superintendents' Conference and the Stock Judging Contests of the same week.

Illinois Traction System

The same rates and procedure will apply to tickets bought over any of the lines of the Illinois Traction System provided tickets read to destination.

7. Conference Proceedings

Owing to the great increase in the cost of paper and printing (15% over last year, even,) we are compelled this year to limit the free distribution of copies of the Conference Proceedings. The fact that our budget has not been increased during the last ten years makes it very difficult to finance even our necessary printing and incidental expenses.

One copy of the proceedings will be sent to each high school and institutional library of the state. Copies will also be sent to each person on a conference committee, or on the current program, and to each county superintendent of the state. A limited number of complimentary copies will be sent to persons and institutions outside of the state. All other teachers or other individuals, or institutions, desiring additional copies will be fur-

nished the same at 45 cents per copy, actual cost. Those desiring copies, and who are not included in any of the above lists to receive free copies, should hand in names with address and 45 cents at the time of the Conference, as the edition printed will be limited.

8. Exhibits

High School Library Exhibit. Upper foyer of the Auditorium.

This exhibit will be prepared by Miss Josie B. Houchens and Miss Anna M. Boyd of the University of Illinois Library.

The Library Division of the Bureau of Educational Research will exhibit interesting bulletins in Room 104, University Hall.

CONFERENCE COMMITTEES

General Conference Committee:

H. A. Hollister, University, Chairman, and Director of the Conference; J. Calvin Hanna, State Department, Springfield; H. V. Canter, University; C. E. Chadsey, University; E. C. Hayes, University; A. P. Johnson, Urbana; W. W. Earnest, Champaign; (The above constitute the executive committee); W. L. Goble, Elgin; H. F. Crosby, Paris; J. H. Whitten, Chicago; Mima Maxey, Normal; I. L. Rogers, Waukegan; S. D. Faris, Carthage; Florence H. Churton, University; H. D. Widger, Charleston; W. E. Andrews, Benton; Erwin Touve, Marion; W. T. Belts, Carbondale; Blenda Olson, Macomb; J. Lawrence Erb, University; Louis Freer, University; T. M. Barger, Normal; M. L. Flaningam, Urbana.

Administrative Section:

W. L. Goble, Elgin, Chairman; W. R. Spurrier, Princeton; R. G. Beals, Taylorville; H. B. Black, Mattoon, Secretary-Treasurer.

Agriculture Section:

H. F. Crosby, Paris, Chairman, 1922; D. H. Wells, Litchfield, 1920; T. W. Clarida, Centralia, 1921; A. W. Nolan, Springfield, 1920; D. L. Reid, University, Secretary, 1922.

Biology Section:

J. H. Whitten, Chicago, Chairman, 1921; H. B. Shinn, Chicago, 1920; Clarence Bonnell, Harrisburg, 1922.

Classics Section :	Mima Maxey, Normal, Chairman, 1920; Helen A. Baldwin, Carbondale, 1922; Julia F. Evans, Maywood, Secretary, 1921.
Commercial Section :	I. L. Rogers, Waukegan, Chairman, 1920; H. F. Ford, Springfield, 1922; N. A. Weston, University, 1921; L. C. Bell, Bridgeport, Secretary, 1920.
County Superintendents' and Village Principals' Section :	S. D. Faris, Carthage, Chairman, 1920; W. A. Hough, Belleville, 1922; O. Rice Jones, Paris, 1921; C. H. Watts, Urbana, 1921; W. S. Booth, Springfield, Secretary.
Domestic Science Section :	Florence H. Churton, University, Chairman, 1920; Isabel Bevier, University, 1920; Kathleen Gaynor, La Salle, 1922; Helen Murphy, Decatur, 1922; Emily Frake, Chicago, 1921; Anne Stoker, Centralia, 1921.
English Section :	H. D. Widger, Charleston, Chairman, 1922; Bess Baker, Maywood, 1922; B. C. Richardson, Alton, 1920; Olive Bear, Decatur, 1920; Alice Bidwell, Freeport, 1921; Bess East, Champaign, 1921.
Geography Section :	W. E. Andrews, Pana, Chairman, 1921; Alyda C. Hanson, University, 1920; F. W. Cox, Flora, 1922.
Manual Arts Section :	Erwin Touve, Marion, Chairman, 1920; Mrs. Nellie Wall, Danville, 1921; Edna Gifford, Charleston, 1921; L. A. Tuggle, Danville, 1922; F. F. Stables, Mt. Vernon, 1922; C. H. Dalton, Lovington, 1921; Rachel L. Skinner, Champaign, 1922; H. C. Mohler, Decatur, Secretary, 1920.
Mathematics Section :	Jessie Brakensiek, Quincy, Chairman, 1920; C. M. Austin, Oak Park, 1921; Velda Bamesberger, Urbana, Secretary, 1920.
Modern Language Section :	Blenda Olson, Macomb, Chairman, 1922; John D. Fitz-Gerald, University, 1920; Johanna H. Doniat, Chicago, 1921.
Music Section :	J. Lawrence Erb, University, Chairman, 1922; L. Louise Bear, Decatur, 1920; Mrs. Homer E. Cotton, Kenilworth, 1920; Mabel Glenn, Bloomington, 1921; Edna King, Joliet, 1921; Mrs. Elizabeth McNair, Mattoon, Secretary, 1922.
Physical Education Section :	Louise Freer, University, Chairman, 1920; Major J. L. Griffith, University, 1920; Anna Lue Hughitt, University, 1920; Marjorie Hull, Oak Park, 1920.

Physical Science Section :	T. M. Barger, Normal, Chairman, 1920; B. S. Hopkins, University, 1921; S. Aleta McEvoy, Rockford, Secretary, 1922.
Social Science Section :	M. L. Flaningam, Urbana, Chairman, 1920; U. S. Parker, Quincy, 1921; P. V. B. Jones, University, Secretary, 1922.
Interlocking Committees :	<ol style="list-style-type: none"> 1. <i>Biology and Agriculture</i>, J. L. Pricer, Normal, Chairman; W. E. Andrews, Pana; L. F. Fulwider, Mt. Pulaski. 2. <i>Languages</i>, John D. FitzGerald, University, Chairman; J. Calvin Hanna, Springfield; Florence Skeffington, Charleston.
Committee for the Correlation of Sciences :	<i>Agriculture</i> , D. H. Wells, Litchfield, A. W. Nolan, University; <i>Biology</i> , H. D. Waggoner, Macomb, J. L. Pricer, Normal; <i>Domestic Science</i> , Ruth Patrick, Hinsdale, Hazel Shultz, Monmouth; <i>Geography</i> , Alyda C. Hanson, University, W. E. Andrews, Benton; <i>Physical Sciences</i> , F. D. Barber, Normal, A. W. Marker, Decatur, H. J. Van Cleave, University, Chairman.
Central Committee on General Conference Objective :	Dean C. E. Chadsey, University; Professor B. R. Buckingham, University; Mr. A. G. Capps, University; Professor H. A. Hollister, University, Chairman.

PROGRAM

A. General Sessions

I. Thursday, November 18, 7:30 P. M. Auditorium Superintendent I. M. Allen, Springfield, Presiding

Music.

Address by H. A. Hollister, Director of the Conference,—“Why Is a Conference?”

Committee Reports:

1. Committee on Extension of High School Service and Economic High School, L. W. Smith, Joliet, Chairman.
2. Committee on Training of Teachers, President David Felmley, Normal, Chairman.

Discussion.

Announcements.

II. Friday, November 19, 7:45 P. M. Auditorium President Livingston C. Lord, Charleston, Presiding

Music.

Greeting by President David Kinley.

John Lossen Pricer, A. M.—A Memorial, by J. H. Whitten, Chicago Normal College.

Address: Contribution of Biological Science to Universal Secondary Education, Otis W. Caldwell, Ph. D., The Lincoln School of Teachers' College, New York.

Announcements.

III. Saturday, November 20, 8:30 to 11 A. M. Auditorium Dean C. E. Chadsey, Presiding

Report of Committee on Continuation School: 1. General Report, Clyde A. Brown, Vocational Guidance Bureau, Chicago; 2. Continuation School Legislation, Morgan G. Hogge, Assistant Superintendent, Chicago; 3. Financing, Superintendent Walter D. Potts, East St. Louis.

Address: An Analysis of Wealth as an Objective,—H. G. Schmidt, Belleville.

Address: Civic Education, F. J. McCormack, La Salle.

B. Section Meetings, Friday, November 19

Administrative Section. Auditorium

(Illinois High School Principals' Association)

W. L. Goble, Presiding

Morning Session, 9 to 12

Objectives as a Basis for Curriculum Reconstruction. C. W. Whitten, De Kalb.

A High School Health Program, Dr. W. A. Evans, Chicago.

Discussion, led by Eston V. Tubbs, New Trier Township High School.

"Wealth as an Objective," O. L. Manchester, Normal University, Normal.

Discussion, led by H. G. Schmidt, Belleville.

Luncheon and Business Meeting 12 M. to 2 P. M.

Basement of Trinity M. E. Church

Afternoon Session, 2 to 5

The Part-Time Continuation School, H. V. Church, J. Sterling Morton Township High School.

Discussion, led by Superintendent I. M. Allen, Springfield.

Meeting of Illinois High School Athletic Association.

Agricultural Section

Morrow Hall

H. F. Crosby, Presiding

Morning Session, 9-12

9:00 A. M.—Opening Remarks, H. F. Crosby, Chairman.

9:15 A. M.—Report of Meeting of the A. A. A. A. T. A. W. Nolan, Associate Professor, Agricultural Education, University of Illinois.

10:00 A. M.—The Vocational Point of View, W. H. Bender, State Director of Vocational Education, Des Moines, Ia.

11:00 A. M.—General Discussion, Appointment of Committees. Business.

Afternoon Session, 1:30-5

- 1:30 P. M.—The Class Project: E. B. Henderson, Bridgeport.
Discussion: Gilbert Willey Gurnee; R. E. Augustus, Blue Mound.
- 2:15 P. M.—The Use of the 90 Minute Period: A. C. Brockley, Harvey.
Discussion: W. L. Payne, Harvard; J. H. Loomis, Roodhouse.
- 3:00 P. M.—Supervised Farm Practice: W. G. Wagner, Belleflower; W. A. Newlin, Casey; Clair Brown, Lincoln.
- 3:45 P. M.—Remarks by State Supervisor.
Reports of Committees.
Adjournment.

Biology Section

Y. W. C. A. Assembly Room

J. H. Whitten, Presiding

Morning Session, 9 to 12

Announcements.

Objectives as a Basis for Curriculum Reconstruction. G. J. Koons, Pontiac Township High School.

The Content and Organization of the Biology in a Sequence of Science Studies for all High School Students. Otis W. Caldwell, The Lincoln School of Teachers' College, Columbia University.

Discussion.

Afternoon Session, 2 to 5

Classroom Periods and Methods of Instruction in High School Biology. H. A. Hollister, High School Visitor for the University of Illinois.

Harry A. Cunningham, Paxton High School.

Educational Tests in High School Biology. Elliot R. Downing, Department of Natural Sciences of the School of Education, University of Chicago.

Discussion.

Business: Election of one member of the executive committee.

Classical Section
University Place Christian Church
Professor W. A. Oldfather, Presiding

Morning Session, 9-12

Objectives as a Basis for Curriculum Reconstruction. Principal C. H. Kingman, High School, Ottawa.

The section will then be divided into three divisions for the remainder of the morning.

- I. The Vitalization of Latin. Professor H. J. Barton, presiding. Leader, Miss Laura B. Woodruff, High School, Oak Park.
- II. Objectives for Each Year. Professor C. M. Moss, presiding. Leader, Miss Helen A. Baldwin, Normal School, Carbondale.
- III. The Latin Recitation in the Laboratory Method. Professor A. S. Pease, presiding. Leader, Miss Julia F. Evans, High School, Maywood.

Luncheon at the University Place Church

Afternoon Session, 1:30-5

Reports from each of the three divisions.

Report of Committee on Curriculum.

The Latin Situation from the Viewpoint of the Principal. Principal George H. Rockwood, High School, Austin.

Latin Tests. Mr. C. W. Odell, University of Illinois.

Brescia, a Provincial Capital of the Augustan Age (Illustrated). Professor H. V. Canter, University of Illinois.

The Classical Museum and Museum of European Culture, Lincoln Hall, will be open to visitors on Friday from 1 to 6 P. M., and Saturday morning from 9 to 12.

Commercial Section
Room 100 Commerce Building
Professor H. T. Scovill, Presiding

Morning Session, 9 to 12

Objectives as a Basis for Curriculum Reconstruction, Principal A. A. Rea, West High School, Aurora.

10 A. M.—Advantages of Attending the High School Conference, I. L. Rogers, Educational Director, Porter School of Commerce, Evansville, Indiana.

11 A. M.—Business Session.

Afternoon Session, 2 to 5

Round Table Discussions on the Teaching of Commercial Subjects.

- A. Economic Principles—Discussion led by Dean C. M. Thompson, College of Commerce, University of Illinois.
- B. Bookkeeping—Mr. Ralph Gill, Springfield High School.
- C. Stenography—Miss Frances Grose, Crystal Lake High School.
- D. Typewriting—Miss Rose Wells, Urbana High School.
- E. Commercial Arithmetic—
- F. Commercial Geography—A. Q. Larson, LaGrange High School.
- G. Business English—Stacey B. Irish, Evanston Township High School.

[Owing to a break in the organization of the section committee this program had to be prepared, on very short notice, by Professor Scovill.]

County Superintendents' and Village Principals' Section

Room 119 Physics Building

S. D. Faris, Presiding

Morning Session, 9 to 12

Announcements. Other Business.

The Development of Morale in High School Pupils as a Factor in Supervision. P. E. Belting, University of Illinois.

Objectives as a Basis for Curriculum Reconstruction. Principal M. H. Willing, Springfield.

Standard Tests for High Schools. B. R. Buckingham, University of Illinois.

Afternoon Session, 2 to 5

Report of Committee on Harmonizing Standards for University of Illinois and State Department of Education. Principal L. W. Smith, Joliet.

General Discussion by the Committee and Members of the Section.

Agriculture in the Small High School. A. W. Nolan, University of Illinois.

English Section

Moot Court

(The Illinois Association of Teachers of English)

Miss Skeffington, Presiding

Morning Session, 9 to 12

President's Address. Miss Florence V. Skeffington, Eastern Illinois State Normal School, Charleston.

Secretary's Report. Professor E. C. Baldwin, University of Illinois.

"Objectives as a Basis for Curriculum Reconstruction." Principal L. W. Hanna, Centralia.

Report of Committee on Curriculum Reconstruction.

A. "Literary Attitudes and Reactions in Boys and Girls". Miss Essie Chamberlain, Oak Park.

B. "Error Elimination". Miss Susan Wilcox, Springfield.

Discussion of report.

"Results of Testing English Composition in Illinois High Schools". Mr. A. W. Clevenger, Assistant High School Visitor, University of Illinois.

Discussion, led by Mr. O. A. English, Robinson.

Afternoon Session, 2 to 5

"Minimum List of Books for First Year Literature". Miss Clara N. Hawkes, Decatur.

Discussion.

"Better Speech Year."

Better Sentences, Principal R. L. Sandwick, Highland Park.

Better Vocabulary, Miss Isabel McKinney, Charleston.

Practical Classroom Methods in Oral English, Miss Eliza Thomas, Decatur.

Geography Section
Room 241 Natural History Building
Miss Alyda C. Hanson, Presiding

Morning Session, 9 to 12

Announcements.

Paper. The Meaning of Present Day Geography, Professor Colby, University of Chicago.

Paper. Problems in the Selection of Materials for High School Classes in Geography. Miss Marion Sykes, Bowen High School, Chicago.

Geographic Influences in the Human Life of the Arctic, Mr. W. Elmer Ekblaw, University of Illinois.

Paper. Objectives as a Basis for Curriculum Reconstruction. Mr. Flemin Cox, Principal, Flora High School, Flora.

Discussion.

Business.

Home Economics Section
Room 113 Woman's Building
Miss Bevier, Presiding

Morning Session, 9 to 12

Announcements.

Objectives as a Basis for Curriculum Reconstruction, Mr. William E. McVey, Principal of Thornton Township High School, Harvey.

Round Table: The Vocational Home Economics Courses, Miss Esther Philley, Eldorado High School, in charge. Miss Cora I. Davis, State Supervisor of Vocational Home Economics Courses.

The Responsibility of the Home Economics Instructor for the Health of the High School Pupils, Miss Fannie Brooks, University of Illinois.

Afternoon Session, 2 to 5

Exhibition of Films Suitable for High School Use, Room 228 Natural History Building. (Returning after first number to 113 Woman's Building.)

Question Box conducted by Miss Alice Traganza, Bloomington High School, Bloomington.

Division of the Section:

Round Table Discussion:

- (a) Food and Household Management Problems, led by Miss Rua Van Horn, New Trier Township High School, Kenilworth.
- (b) Clothing and Budgeting Problems, led by Miss Bertha Harper, Danville High School, Danville.

Manual Arts Section
406-7 Education Building
Erwin Touve, Presiding

Morning Session, 9 to 12

Report of Committee on "Course of Study in Manual Arts", Professor S. J. Vaughn.

"Curriculum Reconstruction". Principal Arnold Lau, Rock Island.

"Continuation Work and Its Relation to Manual Arts", Professor S. J. Vaughn, University of Illinois.

"Positive Methods by Which the Art Courses and Manual Training Courses Can Be Brought into Closer Relationship", Mrs. Nellie Wall and Captain L. A. Tuggle, Danville.

Afternoon Session, 2 to 5

Division of the Section into Two Groups
Manual Training Teachers' Group and Art Teachers' Group
Manual Training Teachers' Group
406-7 Education Building
Professor S. J. Vaughn, Presiding

Libraries for the Manual Art Teacher and Class, by C. H. Dalton, Lovington.

Discussion led by Mr. R. S. Condon, Decatur.

Productive Work in the Manual Training Shop, Mr. R. L. F. Biesemeier, Kenilworth.

Discussion led by Mr. F. F. Stables, Mt. Vernon.

Problems of the Manual Training Departments. A Round Table discussion of the problems of the Manual Training teacher.

Art Teachers' Group
416 University Hall
Professor E. J. Lake, Presiding

Discussion of Problems of vital interest to the Art teachers.
Program in detail not completed at time of going to press.

Mathematics Section
100 Physics Building
Jessie D. Brakensiek, Presiding

Morning Session, 9 to 12

"Objectives as a Basis for Curriculum Reconstruction," Mr. T. M. Deam, Principal of Decatur High School, Decatur.

"Experimental Tests of Mathematical Ability and Their Prognostic Value". A Discussion of the Rogers Tests, L. E. Mensenkamp, Freeport.

Discussion led by Lyman L. Standley, Oak Park.

A Study of Pupil's Errors, E. W. Owen, Oak Park.

General Discussion.

Afternoon Session, 2 to 5

Report of The National Committee on Mathematical Requirements, J. A. Foberg, Vice-Chairman of the National Committee.

What Are Reasonable Things for the Colleges to Expect of the High Schools in Mathematics? H. P. Pettit, University of Illinois, and Flora E. Balch, Evanston.

Modern Language Section
Room 202 Lincoln Hall
Miss Josephine Doniat, Presiding

Morning Session, 9 to 12

"Objectives as a Basis for Curriculum Reconstruction," Mr. H. B. Hughes, Principal of Hinsdale High School, Hinsdale.

Observations on the High School Teaching of Foreign Languages, A. W. Clevenger, Assistant High School Visitor, University.

Report of Committee on the Value of Foreign Language Study to High School Graduates who Did Not Go to College, Miss Eunice Prutsman, Chicago.

The Teaching of German on a Comparative Basis with English, Professor Julius Goebel, University.

"Value of the French Club," Miss Lois Scott, Mattoon High School.

Afternoon Session, 2 to 5

Third Year and Fourth Year Syllabus for High School French, Miss Josephine Doniat, Chicago.

Third Year and Fourth Year Syllabus for High School Spanish, Professor John D. FitzGerald, University.

The Importance of Modern Foreign Languages to the Student of History, Professor Paul Van Brunt Jones, University.

[This program was hurriedly prepared by Professor FitzGerald in case of an emergency.]

Music Section

Recital Hall, Music Building

J. Lawrence Erb, Presiding

Morning Session, 9 to 12

Address of Welcome.

Announcements.

Reports of Standing Committees:

History of Music, L. L. Carl, Belleville, Chairman.

Graded Materials for High School Chorus and Orchestra, L. Louise Bear, Decatur, Chairman.

Musical Appreciation, Mabelle Glenn, Bloomington, Chairman.

Prerequisites for Accrediting Applied Music, Mary D. Phillips, University, Chairman.

Address: "Objectives as a Basis for Curriculum Reconstruction", Principal M. G. Park, Galesburg.

Afternoon Session, 2 to 5

Annual Business Meeting.

Reports from High Schools Accrediting Music.

Address: "The High School Band: Its Personnel and Organization", Professor A. A. Harding, University.

Discussion: "Music Activities in School Hours", opened by Miss Inez Goodcill, Galesburg.

Round Table: "University Credit for Applied Music in the High School".

Question Box.

Physical Education Section

Woman's Athletic Association Room, Woman's Building

John L. Griffith, Presiding

Morning Session, 9 to 12

Hygienic Objectives in Physical Education, R. A. Holderby, Joliet High School.

Educative Objectives in Physical Education, P. E. Belting, University.

The Purpose of Competitive Athletics, F. J. Winters, University.

Objectives as a Basis for Curriculum Reconstruction, H. V. Church, Cicero High School.

Afternoon Session, 2 to 4:30

Exhibition of Films Showing Need of Correct Footwear. 228 Natural History Building. (Returning to Woman's Building for rest of program.)

Hygiene in the High Schools, Dr. Gertrude E. Moulton, University.

The Girls' State High School Athletic Association, Miss Ruth Glasso, Normal, Illinois.

Business Meeting.

[Owing to an unexpected break in the Section Committee this program had to be hurriedly prepared. It was arranged by Professor John L. Griffith.]

Physical Science Section
100 Chemistry Building
T. M. Barger, Presiding

Morning Session, 9 to 12

Objectives as a Basis for Curriculum Reconstruction. H. B. Black, Mattoon.

Discussion.

How Our Teaching Should be Modified to Agree with Recent Developments:

In Physics, F. R. Watson, University.

In Chemistry, B. S. Hopkins, University.

Business.

Afternoon Session, in two divisions, 2 to 5

Physics. T. M. Barger, Presiding, 103 Chemistry Building.
Round Table Discussions of Projects.
New Experiments.

Chemistry. Charles Gooding, Presiding, 111 Chemistry Building.

Round Table Discussions: How May Local Interest in Chemistry be Increased? C. E. Osborn, Oak Park.

How May the Chemistry Class Serve the Community? C. M. Wirick, Chicago.

Social Science Section
Trinity M. E. Church Auditorium
Principal M. L. Flaningam, Urbana, Presiding

Morning Session, 9 to 12

Impressions Gathered on an Inspection Trip. Professor P. V. B. Jones, University of Illinois.

Proposed Reconstruction of the Curriculum in History.

- a. Objectives as a basis for reconstruction of curriculums in high school. Principal L. A. Fulwider, Freeport.
- b. The Curriculum in History in the Joliet High School. Ralph H. Bush, Joliet.
- c. General Discussion led by Principal E. V. Tubbs, Kenilworth.

Afternoon Session, 2 to 5

U. S. Parker, Quincy, Presiding

The New Ancient History. Professor A. T. Olmstead, University of Illinois.

Discussion led by Lorena Beckwith, Urbana.

Recent tendencies in the Teaching of Civics. Helen G. Bardens, Moline.

Discussion led by Professor H. A. Hollister, University of Illinois.

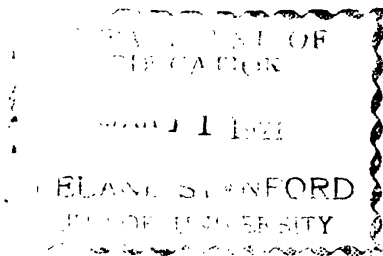
Attention is called to the following museums and exhibits in Lincoln Hall:

- a. An exhibit of materials devised for class room purposes; third floor.
- b. An exhibit of historical manuscripts, newspapers and other materials in possession of The Illinois Historical Survey; fourth floor.
- c. The museums of European Culture, of Classical Archaeology and of Oriental Culture; fourth floor. The curators and custodians will be present to direct visitors and explain the exhibits.

The members of the section will dine informally in the dining room of Trinity Methodist Church on November 19, at 6 P. M.

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